

SEQUENCE LISTING

<110> JESTIN, Andre

ALBINA, Emanuel

Le CANN, Pierre

BLANCHARD, Phillipe

HUTET, Evelyne

ARNAULD, Claire

TRUONG, Catherine

MAHE, Dominique

CARIOLET, Roland

MADEC, Francois

<120> CIRCOVIRUS SEQUENCES ASSOCIATED WITH PIGLET WEIGHT LOSS DISEASE
(PWD)

<130> 065691/0176

<140> US 09/514,245

<141> 2000-02-28

<150> FR 97/15396

<151> 1997-12-05

<160> 170

<170> PatentIn version 3.0

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<213> Type A PWD circovirus

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gcc aag caa gaa aag cgg ccc gca acc cca taa gag gtg ggt gtt cac	96
Ala Lys Gln Glu Lys Arg Pro Ala Thr Pro Glu Val Gly Val His	
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cct taataa tcc ttc cga gga gga gaa aaa caa aat acg gga gct tcc	144
Pro Ser Phe Arg Gly Gly Glu Lys Gln Asn Thr Gly Ala Ser	
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aat ctc cct ttt tga tta ttt tgt ttg tgg cga gga agg ttt gga aga	192
Asn Leu Pro Phe Leu Phe Cys Leu Trp Arg Gly Arg Phe Gly Arg	
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ggg tag aac tcc tca cct cca ggg gtt tgc gaa ttt tgc taa gaa gca	240
Gly Asn Ser Ser Pro Pro Gly Val Cys Glu Phe Cys Glu Ala	
65 70	
gac ttt taa caa ggt gaa gtg gta ttt tgg tgc ccg ctg cca cat cga	288
Asp Phe Gln Gly Glu Val Val Phe Trp Cys Pro Leu Pro His Arg	
75 80 85	
gaa agc gaa agg aac cga cca gca gaa taa aga ata ctg cag taa aga	336
Glu Ser Glu Arg Asn Arg Pro Ala Glu Arg Ile Leu Gln Arg	
90 95 100	
agg cca cat act tat cga gtg tgg agc tcc gcg gaa cca ggg gaa gcg	384
Arg Pro His Thr Tyr Arg Val Trp Ser Ser Ala Glu Pro Gly Glu Ala	
105 110 115	
cag cga cct gtc tac tgc tgt gag tac cct ttt gga gac ggg gtc ttt	432
Gln Arg Pro Val Tyr Cys Cys Glu Tyr Pro Phe Gly Asp Gly Val Phe	
120 125 130 135	
ggt gac tgt agc cga gca gtt tcc tgt aac gta tgt gag aaa ttt ccg	480
Gly Asp Cys Ser Arg Ala Val Ser Cys Asn Val Cys Glu Lys Phe Pro	
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cgg gct ggc tga act ttt gaa agt gag cgg gaa gat gca gaa gcg, tga	528
Arg Ala Gly Thr Phe Glu Ser Glu Arg Glu Asp Ala Glu Ala	
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ttg gaa gac agc tgt aca cgt cat agt ggg ccc gcc cgg ttg tgg gaa	576
Leu Glu Asp Ser Cys Thr Arg His Ser Gly Pro Ala Arg Leu Trp Glu	
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gag cca gtg ggc ccg taa ttt tgc tga gcc tag gga cac cta ctg gaa	624
Glu Pro Val Gly Pro Phe Cys Ala Gly His Leu Leu Glu	
185 190	

gcc tagtag aaa taa gtg gtg gga tgg ata tca tgg aga aga agt tgt	672
Ala Lys Val Val Gly Trp Ile Ser Trp Arg Arg Ser Cys	
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tgt ttt gga tga ttt tta tgg ctg gtt acc ttg gga tga tct act gag	720
Cys Phe Gly Phe Leu Trp Leu Val Thr Leu Gly Ser Thr Glu	
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act gtg tga ccg gta tcc att gac tgt aga gac taa agg ggg tac tgt	768
Thr Val Pro Val Ser Ile Asp Cys Arg Asp Arg Gly Tyr Cys	
225 230 235	
tcc ttt ttt ggc ccg cag tat ttt gat tac cag caa tca ggc ccc cca	816
Ser Phe Phe Gly Pro Gln Tyr Phe Asp Tyr Gln Gln Ser Gly Pro Pro	
240 245 250	
gga atg gta ctc ctc aac tgc tgt ccc agc tgt aga agc tct cta tcg	864
Gly Met Val Leu Leu Asn Cys Cys Pro Ser Cys Arg Ser Ser Leu Ser	
255 260 265	
gag gat tac tac ttt gca att ttg gaa gac tgc tgg aga aca atc cac	912
Glu Asp Tyr Tyr Phe Ala Ile Leu Glu Asp Cys Trp Arg Thr Ile His	
270 275 280	
gga ggt acc cga agg ccg att tga agc agt gga ccc acc ctg tgc cct	960
Gly Gly Thr Arg Arg Pro Ile Ser Ser Gly Pro Thr Leu Cys Pro	
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ttt ccc ata taa aat aaa tta ctg agt ctt ttt tgt tat cac atc gta	1008
Phe Pro Ile Asn Lys Leu Leu Ser Leu Phe Cys Tyr His Ile Val	
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atg gtt ttt att ttt att cat tta gag ggt ctt tca gga taa att ctc	1056
Met Val Phe Ile Phe Ile His Leu Glu Gly Leu Ser Gly Ile Leu	
315 320 325	
tga att gta cat aaa tag tca acc tta cca cat aat ttt ggg ctg tgg	1104
Ile Val His Lys Ser Thr Leu Pro His Asn Phe Gly Leu Trp	
330 335 340	
ttg cat ttt gga gcg cat agc cca ggc ctg tgt gct cga cat tgg tgt	1152
Leu His Phe Gly Ala His Ser Pro Gly Leu Cys Ala Arg His Trp Cys	
345 350 355	
ggg tat tta aat gga gcc aca gct ggt ttc ttt tat tat ttg gct gga	1200
Gly Tyr Leu Asn Gly Ala Thr Ala Gly Phe Phe Tyr Tyr Leu Ala Gly	
360 365 370	
acc aat caa ttg ttt ggt cta gct ctg gtt tgg ggg tga agt acc tgg	1248
Thr Asn Gln Leu Phe Gly Leu Ala Leu Val Trp Gly Ser Thr Trp	
375 380 385	
agt ggt agg taa agg gct gcc tta tgg tgt ggc ggg agg agt agt taa	1296
Ser Gly Arg Arg Ala Ala Leu Trp Cys Gly Gly Arg Ser Ser	
390 395 400	

tat agg ggt cat agg cca agt tgg tgg agg ggg tta caa agt tgg cat	1344
Tyr Arg Gly His Arg Pro Ser Trp Trp Arg Gly Leu Gln Ser Trp His	
405 410 415	
cca aga taa caa cag tgg acc caa cac ctc ttt gat tag agg tga tgg	1392
Pro Arg Gln Gln Trp Thr Gln His Leu Phe Asp Arg Trp	
420 425 430	
ggt ctc tgg ggt aaa att cat att tag cct ttc taa tac ggt agt att	1440
Gly Leu Trp Gly Lys Ile His Ile Pro Phe Tyr Gly Ser Ile	
435 440 445	
gga aag gta ggg gta ggg ggt tgg tgc cgc ctg agg ggg gga gga act	1488
Gly Lys Val Gly Val Gly Gly Trp Cys Arg Leu Arg Gly Gly Gly Thr	
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ggc cga tgt tga atc tca gct cgt taa cat tcc aag atg gct gcg agt	1536
Gly Arg Cys Ile Ser Ala Arg His Ser Lys Met Ala Ala Ser	
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gtc ctc ctc tta tgg tga gta caa att ctc tag aaa ggc ggg aat tga	1584
Val Leu Leu Leu Trp Val Gln Ile Leu Lys Gly Gly Asn	
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aga tac ccg tct ttc ggc gcc atc tgt aac ggt ttc tga agg cgg ggt	1632
Arg Tyr Pro Ser Phe Gly Ala Ile Cys Asn Gly Phe Arg Arg Gly	
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gta cca aat atg gtc ttc tcc gga gga tgt ttc caa gat ggc tgc ggg	1680
Val Pro Asn Met Val Phe Ser Gly Gly Cys Phe Gln Asp Gly Cys Gly	
505 510 515 520	
ggc ggg tcc gtc ttc tgc ggt aac gcc tcc ttg gcc acg tca tcc tat	1728
Gly Gly Ser Val Phe Cys Gly Asn Ala Ser Leu Ala Thr Ser Ser Tyr	
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Lys Ser Glu Arg Ser Ala Leu Leu Tyr	
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<212> PRT

<213> Type A PWD circovirus

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Ser Phe Arg Gly Gly Glu Lys Gln Asn Thr Gly Ala Ser Asn Leu Pro
35 40 45

Phe Leu Phe Cys Leu Trp Arg Gly Arg Phe Gly Arg Gly Asn Ser Ser
50 55 60

Pro Pro Gly Val Cys Glu Phe Cys Glu Ala Asp Phe Gln Gly Glu Val
65 70 75 80

Val Phe Trp Cys Pro Leu Pro His Arg Glu Ser Glu Arg Asn Arg Pro
85 90 95

Ala Glu Arg Ile Leu Gln Arg Arg Pro His Thr Tyr Arg Val Trp Ser
100 105 110

Ser Ala Glu Pro Gly Glu Ala Gln Arg Pro Val Tyr Cys Cys Glu Tyr
115 120 125

Pro Phe Gly Asp Gly Val Phe Gly Asp Cys Ser Arg Ala Val Ser Cys
130 135 140

Asn Val Cys Glu Lys Phe Pro Arg Ala Gly Thr Phe Glu Ser Glu Arg
145 150 155 160

Glu Asp Ala Glu Ala Leu Glu Asp Ser Cys Thr Arg His Ser Gly Pro
165 170 175

Ala Arg Leu Trp Glu Glu Pro Val Gly Pro Phe Cys Ala Gly His Leu
180 185 190

Leu Glu Ala Lys Val Val Gly Trp Ile Ser Trp Arg Arg Ser Cys Cys
195 200 205

Phe Gly Phe Leu Trp Leu Val Thr Leu Gly Ser Thr Glu Thr Val Pro
 210 215 220

Val Ser Ile Asp Cys Arg Asp Arg Gly Tyr Cys Ser Phe Phe Gly Pro
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Gln Tyr Phe Asp Tyr Gln Gln Ser Gly Pro Pro Gly Met Val Leu Leu
 245 250 255

Asn Cys Cys Pro Ser Cys Arg Ser Ser Leu Ser Glu Asp Tyr Tyr Phe
 260 265 270

Ala Ile Leu Glu Asp Cys Trp Arg Thr Ile His Gly Gly Thr Arg Arg
 275 280 285

Pro Ile Ser Ser Gly Pro Thr Leu Cys Pro Phe Pro Ile Asn Lys Leu
 290 295 300

Leu Ser Leu Phe Cys Tyr His Ile Val Met Val Phe Ile Phe Ile His
 305 310 315 320

Leu Glu Gly Leu Ser Gly Ile Leu Ile Val His Lys Ser Thr Leu Pro
 325 330 335

His Asn Phe Gly Leu Trp Leu His Phe Gly Ala His Ser Pro Gly Leu
 340 345 350

Cys Ala Arg His Trp Cys Gly Tyr Leu Asn Gly Ala Thr Ala Gly Phe
 355 360 365

Phe Tyr Tyr Leu Ala Gly Thr Asn Gln Leu Phe Gly Leu Ala Leu Val
 370 375 380

Trp Gly Ser Thr Trp Ser Gly Arg Arg Ala Ala Leu Trp Cys Gly Gly
 385 390 395 400

Arg Ser Ser Tyr Arg Gly His Arg Pro Ser Trp Trp Arg Gly Leu Gln
 405 410 415

Ser Trp His Pro Arg Gln Gln Trp Thr Gln His Leu Phe Asp Arg Trp
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Gly Leu Trp Gly Lys Ile His Ile Pro Phe Tyr Gly Ser Ile Gly Lys
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Val Gly Val Gly Gly Trp Cys Arg Leu Arg Gly Gly Gly Thr Gly Arg
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Cys Ile Ser Ala Arg His Ser Lys Met Ala Ala Ser Val Leu Leu Leu
465 470 475 480

Trp Val Gln Ile Leu Lys Gly Gly Asn Arg Tyr Pro Ser Phe Gly Ala
485 490 495

Ile Cys Asn Gly Phe Arg Arg Gly Val Pro Asn Met Val Phe Ser Gly
500 505 510

Gly Cys Phe Gln Asp Gly Cys Gly Gly Gly Ser Val Phe Cys Gly Asn
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Ala Ser Leu Ala Thr Ser Ser Tyr Lys Ser Glu Arg Ser Ala Leu Leu
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Tyr
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<210> 3

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<213> Type A PWD circovirus

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Leu Asn Asn Pro Ser Glu Glu Glu Lys Asn Lys Ile Arg Glu Leu Pro
35 40 45

Ile	Ser	Leu	Phe	Asp	Tyr	Phe	Val	Cys	Gly	Glu	Glu	Gly	Leu	Glu	Glu			
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Gly	Arg	Thr	Pro	His	Leu	Gln	Gly	Phe	Ala	Asn	Phe	Ala	Lys	Lys	Gln			
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Thr	Phe	Asn	Lys	Val	Lys	Trp	Tyr	Phe	Gly	Ala	Arg	Cys	His	Ile	Glu			
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Lys	Ala	Lys	Gly	Thr	Asp	Gln	Gln	Asn	Lys	Glu	Tyr	Cys	Ser	Lys	Glu			
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Gly	His	Ile	Leu	Ile	Glu	Cys	Gly	Ala	Pro	Arg	Asn	Gln	Gly	Lys	Arg			
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Ser	Asp	Leu	Ser	Thr	Ala	Val	Ser	Thr	Leu	Leu	Glu	Thr	Gly	Ser	Leu			
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Val	Thr	Val	Ala	Glu	Gln	Phe	Pro	Val	Thr	Tyr	Val	Arg	Asn	Phe	Arg			
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Gly	Leu	Ala	Glu	Leu	Leu	Lys	Val	Ser	Gly	Lys	Met	Gln	Lys	Arg	Asp			
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Trp	Lys	Thr	Ala	Val	His	Val	Ile	Val	Gly	Pro	Pro	Gly	Cys	Gly	Lys			
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Ser	Gln	Trp	Ala	Arg	Asn	Phe	Ala	Glu	Pro	Arg	Asp	Thr	Tyr	Trp	Lys			
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Pro	Ser	Arg	Asn	Lys	Trp	Trp	Asp	Gly	Tyr	His	Gly	Glu	Glu	Val	Val			
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Val	Leu	Asp	Asp	Phe	Tyr	Gly	Trp	Leu	Pro	Trp	Asp	Asp	Leu	Leu	Arg			
225					230					235					240			
Leu	Cys	Asp	Arg	Tyr	Pro	Leu	Thr	Val	Glu	Thr	Lys	Gly	Gly	Thr	Val			
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Pro	Phe	Leu	Ala	Arg	Ser	Ile	Leu	Ile	Thr	Ser	Asn	Gln	Ala	Pro	Gln			
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Glu	Trp	Tyr	Ser	Ser	Thr	Ala	Val	Pro	Ala	Val	Glu	Ala	Leu	Tyr	Arg			
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Arg	Ile	Thr	Thr	Leu	Gln	Phe	Trp	Lys	Thr	Ala	Gly	Glu	Gln	Ser	Thr			
	290				295						300							
Glu	Val	Pro	Glu	Gly	Arg	Phe	Glu	Ala	Val	Asp	Pro	Pro	Cys	Ala	Leu			
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Phe	Pro	Tyr	Lys	Ile	Asn	Tyr	Val	Phe	Phe	Val	Ile	Thr	Ser	Trp	Phe			
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Leu Phe Leu Phe Ile Arg Val Phe Gln Asp Lys Phe Ser Glu Leu Tyr
 340 345 350
 Ile Asn Ser Gln Pro Tyr His Ile Ile Leu Gly Cys Gly Cys Ile Leu
 355 360 365
 Glu Arg Ile Ala Gln Ala Cys Val Leu Asp Ile Gly Val Gly Ile Met
 370 375 380
 Glu Pro Gln Leu Val Ser Phe Ile Ile Trp Leu Glu Pro Ile Asn Cys
 385 390 395 400
 Leu Val Leu Trp Phe Gly Gly Glu Val Pro Gly Val Val Gly Lys Gly
 405 410 415
 Leu Pro Tyr Gly Val Ala Gly Gly Val Val Asn Ile Gly Val Ile Gly
 420 425 430
 Gln Val Gly Gly Gly Gly Tyr Lys Val Gly Ile Gln Asp Asn Asn Ser
 435 440 445
 Gly Pro Asn Thr Ser Leu Ile Arg Gly Asp Gly Val Ser Gly Val Lys
 450 455 460
 Phe Ile Phe Ser Leu Ser Asn Thr Val Val Leu Glu Arg Gly Val Gly
 465 470 475 480
 Ala Ala Gly Gly Glu Glu Leu Ala Asp Val Glu Ser Gln Leu Val Asn
 485 490 495
 Ile Pro Arg Trp Leu Arg Val Ser Ser Ser Tyr Gly Glu Tyr Lys Phe
 500 505 510
 Ser Arg Lys Ala Gly Ile Glu Asp Thr Arg Leu Ser Ala Pro Ser Val
 515 520 525
 Thr Val Ser Glu Gly Gly Val Tyr Gln Ile Trp Ser Ser Pro Glu Asp
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 545 550 555 560
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<211> 553

<212> PRT

<213> Type A PWD circovirus

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Leu	Pro	Arg	Arg	Arg	Lys	Thr	Lys	Tyr	Gly	Ser	Phe	Gln	Ser	Pro	Phe	
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Leu	Ile	Ile	Leu	Phe	Val	Ala	Arg	Lys	Val	Trp	Lys	Arg	Val	Glu	Leu	
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Leu	Thr	Ser	Arg	Gly	Leu	Arg	Ile	Leu	Leu	Arg	Ser	Arg	Leu	Leu	Thr	
65					70					75					80	
Arg	Ser	Gly	Ile	Leu	Val	Pro	Ala	Ala	Thr	Ser	Arg	Lys	Arg	Lys	Glu	
				85					90					95		
Pro	Thr	Ser	Arg	Ile	Lys	Asn	Thr	Ala	Val	Lys	Lys	Ala	Thr	Tyr	Leu	
			100					105						110		
Ser	Ser	Val	Glu	Leu	Arg	Gly	Thr	Arg	Gly	Ser	Ala	Ala	Thr	Cys	Leu	
		115					120					125				
Leu	Leu	Val	Pro	Phe	Trp	Arg	Arg	Gly	Leu	Trp	Leu	Pro	Ser	Ser	Phe	
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Leu	Arg	Met	Glu	Ile	Ser	Ala	Gly	Trp	Leu	Asn	Phe	Lys	Ala	Gly	Arg	
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Cys	Arg	Ser	Val	Ile	Gly	Arg	Gln	Leu	Tyr	Thr	Ser	Trp	Ala	Arg	Pro	
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Val	Val	Gly	Arg	Ala	Ser	Gly	Pro	Val	Ile	Leu	Leu	Ser	Leu	Gly	Thr	
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Pro	Thr	Gly	Ser	Leu	Val	Glu	Ile	Ser	Gly	Gly	Met	Asp	Ile	Met	Glu	
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Lys	Lys	Leu	Leu	Phe	Trp	Met	Ile	Phe	Met	Ala	Gly	Tyr	Leu	Gly	Met	
	210					215					220					
Ile	Tyr	Asp	Cys	Val	Thr	Gly	Ile	His	Leu	Arg	Leu	Lys	Gly	Val	Leu	
225					230					235					240	
Phe	Leu	Phe	Trp	Pro	Ala	Val	Phe	Leu	Pro	Ala	Ile	Arg	Pro	Pro	Arg	
				245					250					255		
Asn	Gly	Thr	Pro	Gln	Leu	Leu	Ser	Gln	Leu	Lys	Leu	Ser	Ile	Gly	Gly	
			260					265						270		

Leu	Leu	Leu	Cys	Asn	Phe	Gly	Arg	Leu	Leu	Glu	Asn	Asn	Pro	Arg	Arg	275	280	285
Tyr	Pro	Lys	Ala	Asp	Leu	Lys	Gln	Trp	Thr	His	Pro	Val	Pro	Phe	Ser	290	295	300
His	Ile	Lys	Ile	Thr	Glu	Ser	Phe	Leu	Leu	Ser	His	Arg	Asn	Gly	Phe	305	310	315
Tyr	Phe	Tyr	Ser	Phe	Arg	Gly	Ser	Phe	Arg	Ile	Asn	Ser	Leu	Asn	Cys	325	330	335
Thr	Ile	Val	Asn	Leu	Thr	Thr	Phe	Trp	Ala	Val	Val	Ala	Phe	Trp	Ser	340	345	350
Ala	Pro	Arg	Pro	Val	Cys	Ser	Thr	Leu	Val	Trp	Val	Phe	Lys	Trp	Ser	355	360	365
His	Ser	Trp	Phe	Leu	Leu	Leu	Phe	Gly	Trp	Asn	Gln	Ser	Ile	Val	Trp	370	375	380
Ser	Ser	Ser	Gly	Leu	Gly	Val	Lys	Tyr	Leu	Glu	Trp	Val	Lys	Gly	Cys	385	390	395
Leu	Met	Val	Trp	Arg	Glu	Glu	Leu	Ile	Gly	Ser	Ala	Lys	Leu	Val	Glu	405	410	415
Gly	Val	Thr	Lys	Leu	Ala	Ser	Lys	Ile	Thr	Thr	Val	Asp	Pro	Thr	Pro	420	425	430
Leu	Leu	Glu	Val	Met	Gly	Ser	Leu	Gly	Asn	Ser	Tyr	Leu	Ala	Phe	Leu	435	440	445
Ile	Arg	Tyr	Trp	Lys	Gly	Arg	Gly	Arg	Gly	Leu	Val	Pro	Pro	Glu	Gly	450	455	460
Gly	Arg	Asn	Trp	Pro	Met	Leu	Asn	Leu	Ser	Ser	Leu	Thr	Phe	Gln	Asp	465	470	475
Gly	Cys	Glu	Cys	Pro	Pro	Leu	Met	Val	Ser	Thr	Asn	Ser	Leu	Glu	Arg	485	490	495
Arg	Glu	Leu	Lys	Ile	Pro	Val	Phe	Arg	Arg	His	Leu	Arg	Phe	Leu	Lys	500	505	510
Ala	Gly	Cys	Thr	Lys	Tyr	Gly	Leu	Leu	Arg	Arg	Met	Phe	Pro	Arg	Trp	515	520	525
Leu	Arg	Gly	Arg	Val	Arg	Leu	Leu	Arg	Arg	Leu	Leu	Gly	His	Val	Ile	530	535	540
Leu	Lys	Lys	Lys	Cys	Ala	Ala	Val	Val								545	550	

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<212> DNA

<213> Type A PWD circovirus

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ttggtacacc ccgccttcag aaaccgttac agatggcgcc gaaagacggg tatcttcaat	180
tcccgccttt ctagagaatt tgtactcacc ataagaggag gacactcgca gccatcttgg	240
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cccctacccc tacctttcca atactaccgt attagaaagg ctaaatatga attttacccc	360
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aactttgtaa cccctccac caacttggcc tatgaccct atattaacta ctctcccg	480
cacaccataa ggcagccctt tacctaccac tccaggtact tcacccccaa accagagcta	540
gaccaaaciaa ttgattgggt ccagccaaat aataaaagaa accagctgtg gctccattta	600
aatacccaca ccaatgtcga gcacacaggc ctgggctatg cgctccaaaa tgcaaccaca	660
gcccaaaatt atgtggtaag gttgactatt tatgtacaat tcagagaatt tctctgaaa	720
gaccctctaa atgaataaaa ataaaaacca ttacgatgtg ataacaaaaa agactcagta	780
atttatttta tatgggaaaa gggcacaggg tgggtccact gcttcaaate ggccttcggg	840
tacctccgtg gattgttctc cagcagtctt ccaaaattgc aaagtagtaa tcctccgata	900
gagagcttct acagctggga cagcagttga ggagtaccat tcctgggggg cctgattgct	960
ggtaatcaaa atactgcggg ccaaaaaagg aacagtaccc cctttagtct ctacagtcaa	1020
tggataccgg tcacacagtc tcagtagatc atcccaaggt aaccagccat aaaaatcatc	1080
caaaacaaca acttcttctc catgatatcc atcccaccac ttatttctac taggcttcca	1140
gtaggtgtcc ctaggctcag caaaattacg ggcccactgg ctcttcccac aaccgggcgg	1200
ggccactatg acgtgtacag ctgtcttcca atcacgctgc tgcactcttc cgctcacttt	1260
caaaagttca gccagcccg cggaaatttct cacatacgtt acaggaaact gctcggctac	1320

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agtcaccaaa gaccccgtct ccaaaaggggt actcacagca gtagacaggt cgctgcgctt 1380
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tttattctgc tggtcgggttc ctttcgcttt ctcgatgtgg cagcgggcac caaaatacca 1500
cttcaccttg ttaaaagtct gcttcttagc aaaattcgca aacccttggg ggtgaggagt 1560
tctacctctt tccaaacctt cctcgccaca aacaaaataa tcaaaaaggg agattggaag 1620
ctcccgtatt ttgtttttct cctcctcgga aggattatta agggatgaaca cccacctctt 1680
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gctgccgaag tgcgctgggt 1759

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<210> 6

<211> 567

<212> PRT

<213> Type A PWD circovirus

<400> 6

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Gly Ala Cys Lys Pro Leu Pro Leu Val Glu Ala Ala Asp Thr Phe Ile
1          5          10          15
Gly Leu Leu Phe Leu Pro Gly Cys Gly Trp Leu Leu His Thr Asn Val
20          25          30
Arg Leu Leu Gly Glu Ser Ser Ser Phe Phe Leu Ile Arg Ser Ser Gly
35          40          45
Ile Glu Arg Lys Ser Lys Thr Gln Pro Ser Ser Pro Lys Ser Ser Pro
50          55          60
Leu Val Gly Arg Trp Pro Asn Ala Phe Lys Ala Leu Phe Cys Val Lys
65          70          75          80
Leu Leu Thr Phe His Tyr Lys Pro Ala Arg Gln Trp Met Ser Phe Ala
85          90          95
Phe Pro Val Ser Trp Cys Phe Leu Ser Tyr Gln Leu Leu Ser Pro Trp
100         105         110
Met Ser Ile Ser His Pro Ala Gly Arg Phe Trp Pro Phe Arg Leu Ser
115         120         125
Arg Asp Val Ala Thr Leu Val Arg Lys Ser Val Pro Asp Lys Thr Val
130         135         140

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Trp Ser Leu Leu Leu Pro Gly Leu Val Glu Lys Ile Leu Pro Ser Pro
 435 440 445
 Thr Glu Pro Thr Phe Asn Met Asn Leu Arg Glu Leu Val Thr Thr Asn
 450 455 460
 Ser Leu Tyr Pro Tyr Pro Thr Pro Ala Ala Gln Pro Pro Ser Ser Ser
 465 470 475 480
 Ala Ser Thr Ser Asp Ser Thr Leu Met Gly Leu His Ser Arg Thr Asp
 485 490 495
 Glu Glu Pro Ser Tyr Leu Asn Glu Leu Phe Ala Pro Ile Ser Ser Val
 500 505 510
 Arg Arg Glu Ala Gly Asp Thr Val Thr Glu Ser Pro Pro Thr Tyr Trp
 515 520 525
 Ile His Asp Glu Gly Ser Ser Thr Glu Leu Ile Ala Ala Pro Ala Pro
 530 535 540
 Gly Asp Glu Ala Thr Val Gly Gly Gln Gly Arg Gly Ile Phe Thr Phe
 545 550 555 560
 Ser Thr Arg Gln Gln Leu Ile
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<210> 7

<211> 580

<212> PRT

<213> Type A PWD circovirus

<400> 7

Trp Arg Val Glu Ala Ala Ala Ala Gly Arg Cys Arg His Phe His Trp
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 Ala Leu Phe Ala Ala Arg Leu Gly Met Leu Pro Pro His Glu Gly Lys
 20 25 30
 Ile Ile Arg Gly Leu Leu Leu Phe Val Phe Tyr Pro Leu Lys Trp Asp
 35 40 45
 Gly Lys Lys Ile Ile Lys Asn Thr Ala Leu Phe Thr Gln Phe Leu Thr
 50 55 60
 Ser Ser Arg Val Glu Leu Pro Lys Arg Ile Lys Ser Leu Leu Leu Ser
 65 70 75 80

Lys	Val	Leu	His	Leu	Pro	Ile	Lys	Thr	Gly	Ala	Ala	Val	Asp	Leu	Phe	85	90	95	
Arg	Phe	Ser	Gly	Val	Leu	Leu	Ile	Phe	Phe	Val	Ala	Thr	Phe	Phe	Ala	100	105	110	
Val	Tyr	Lys	Asp	Leu	Thr	Ser	Ser	Arg	Pro	Val	Leu	Pro	Leu	Ala	Ala	115	120	125	
Val	Gln	Arg	Ser	Ser	His	Thr	Gly	Lys	Gln	Leu	Arg	Pro	Arg	Gln	His	130	135	140	
Ser	Tyr	Gly	Leu	Leu	Lys	Arg	Tyr	Arg	Ile	His	Ser	Ile	Glu	Ala	Pro	145	150	155	160
Gln	Ser	Phe	Lys	Gln	Phe	His	Ala	Pro	Leu	His	Leu	Leu	Thr	Ile	Pro	165	170	175	
Leu	Cys	Ser	Tyr	Val	Asp	Tyr	His	Ala	Arg	Gly	Thr	Thr	Pro	Leu	Ala	180	185	190	
Leu	Pro	Gly	Thr	Ile	Lys	Ser	Leu	Arg	Pro	Val	Gly	Val	Pro	Leu	Arg	195	200	205	
Thr	Ser	Ile	Leu	Pro	Pro	Ile	Ser	Ile	Met	Ser	Phe	Phe	Asn	Asn	Asn	210	215	220	
Gln	Ile	Ile	Lys	Ile	Ala	Pro	Arg	Pro	Ile	Ile	Gln	Ser	Gln	Thr	Val	225	230	235	240
Pro	Ile	Trp	Gln	Ser	Tyr	Leu	Ser	Phe	Pro	Thr	Ser	Asn	Arg	Lys	Gln	245	250	255	
Gly	Ala	Thr	Asn	Gln	Asn	Gly	Ala	Ile	Leu	Gly	Gly	Leu	Phe	Pro	Val	260	265	270	
Gly	Ser	Ser	Asp	Trp	Ser	Tyr	Phe	Ser	Glu	Ile	Pro	Pro	Asn	Ser	Ser	275	280	285	
Gln	Leu	Lys	Pro	Leu	Ser	Ser	Ser	Phe	Leu	Gly	Arg	Leu	Tyr	Gly	Phe	290	295	300	
Ala	Ser	Lys	Phe	Cys	His	Val	Trp	Gly	Thr	Gly	Lys	Glu	Trp	Ile	Phe	305	310	315	320
Tyr	Ile	Val	Ser	Asp	Lys	Lys	Asn	Asp	Cys	Arg	Leu	Pro	Lys	Lys	Glu	325	330	335	
Asn	Leu	Pro	Asp	Lys	Leu	Ile	Phe	Glu	Arg	Phe	Gln	Val	Tyr	Ile	Thr	340	345	350	
Leu	Arg	Val	Val	Tyr	Asn	Gln	Ala	Thr	Thr	Ala	Asn	Gln	Leu	Ala	Tyr	355	360	365	

Gly	Leu	Gly	Thr	His	Glu	Val	Asn	Thr	His	Thr	Asn	Leu	His	Leu	Trp
370						375					380				
Leu	Gln	Asn	Arg	Lys	Asn	Asn	Pro	Gln	Phe	Trp	Asp	Ile	Thr	Gln	Asp
385					390					395					400
Leu	Glu	Pro	Lys	Pro	Thr	Phe	Tyr	Arg	Ser	His	Tyr	Thr	Phe	Pro	Gln
				405					410					415	
Arg	Ile	Thr	His	Arg	Ser	Ser	Tyr	Asn	Ile	His	Pro	Asp	Tyr	Ala	Leu
			420					425					430		
Asn	Thr	Ser	Pro	Thr	Val	Phe	Asn	Ala	Asp	Leu	Ile	Val	Val	Thr	Ser
		435					440					445			
Gly	Val	Gly	Arg	Gln	Asn	Ser	Thr	Ile	Pro	Asp	Arg	Pro	Tyr	Phe	Glu
	450					455					460				
Tyr	Lys	Ala	Lys	Arg	Ile	Arg	Tyr	Tyr	Gln	Phe	Pro	Leu	Pro	Leu	Pro
465					470					475					480
Asn	Thr	Gly	Gly	Ser	Pro	Pro	Leu	Phe	Gln	Gly	Ile	Asn	Phe	Arg	Leu
				485					490					495	
Glu	Asn	Val	Asn	Trp	Ser	Pro	Gln	Ser	His	Gly	Gly	Arg	Ile	Thr	Leu
			500					505					510		
Val	Phe	Glu	Arg	Ser	Leu	Arg	Ser	Asn	Phe	Ile	Gly	Thr	Lys	Arg	Arg
		515					520					525			
Trp	Arg	Tyr	Arg	Asn	Arg	Phe	Ala	Pro	His	Val	Leu	Tyr	Pro	Arg	Arg
	530					535					540				
Arg	Leu	Ile	Asn	Gly	Leu	His	Ser	Arg	Pro	Arg	Thr	Arg	Arg	Arg	Arg
545					550					555					560
Tyr	Arg	Arg	Arg	Pro	Trp	Thr	Met	Arg	Tyr	Phe	His	Phe	Phe	His	Ala
				565					570					575	
Ala	Thr	Thr	Asn												
			580												

<210> 8

<211> 557

<212> PRT

<213> Type A PWD circovirus

<400> 8

Leu	Ala	Ser	Arg	Cys	Arg	Cys	Cys	Arg	Pro	Leu	Thr	Leu	Ser	Phe	Ala	1	5	10	15
Leu	Cys	Ser	Phe	Arg	Gly	Ala	Val	Gly	Tyr	Ser	Thr	Pro	Thr	Gly	Tyr	20	25	30	
Asp	Lys	Arg	Pro	Pro	Ser	Phe	Cys	Phe	Val	Pro	Ala	Glu	Leu	Arg	Gly	35	40	45	
Lys	Gln	Asn	Asn	Gln	Lys	His	Arg	Pro	Leu	Asn	Pro	Leu	Pro	Tyr	Phe	50	55	60	
Glu	Glu	Gly	Gly	Pro	Thr	Gln	Ser	Asn	Gln	Ser	Ala	Ser	Lys	Cys	Pro	65	70	75	80
Ser	Thr	Thr	Asn	Gly	His	Gly	Ser	Gly	Cys	Arg	Ser	Leu	Ser	Leu	Phe	85	90	95	
Arg	Gly	Ala	Ser	Tyr	Leu	Ile	Ser	Cys	Tyr	Leu	Leu	Gly	Cys	Val	Arg	100	105	110	
Thr	His	Leu	Glu	Ala	Ser	Gly	Pro	Ser	Ala	Cys	Arg	Gly	Thr	Gln	Gln	115	120	125	
Ser	Tyr	Gly	Lys	Pro	Ser	Pro	Thr	Lys	Pro	Ser	Gln	Leu	Arg	Ala	Thr	130	135	140	
Glu	Gln	Leu	Thr	His	Ser	Phe	Asn	Gly	Arg	Ala	Pro	Gln	Val	Lys	Ser	145	150	155	160
Leu	Ser	Arg	Ser	Ser	Ala	Ala	Ala	His	Asn	Ser	Ser	Leu	Gln	Val	Arg	165	170	175	
Leu	Pro	Gly	Ala	Arg	Asn	His	Ser	Ser	Gly	Thr	Pro	Gly	Tyr	Asn	Gln	180	185	190	
Gln	Ala	Pro	Cys	Arg	Ser	Ser	Ala	Tyr	Phe	Tyr	Thr	Thr	Pro	His	Ile	195	200	205	
Asp	His	Leu	Leu	Leu	Gln	Gln	Lys	Pro	His	Asn	Lys	His	Ser	Thr	Val	210	215	220	
Lys	Pro	His	Asp	Val	Ser	Val	Thr	His	Gly	Thr	Asp	Met	Ser	Gln	Leu	225	230	235	240
Ser	Leu	Pro	Tyr	Gln	Glu	Lys	Lys	Pro	Gly	Cys	Tyr	Lys	Ser	Trp	Cys	245	250	255	
Asp	Pro	Gly	Gly	Pro	Ile	Thr	Ser	Arg	Leu	Gln	Gln	Gly	Leu	Gln	Leu	260	265	270	
Leu	Glu	Arg	Asp	Ser	Ser	Lys	Ala	Ile	Lys	Ser	Ser	Gln	Gln	Leu	Val	275	280	285	

Ile	Trp	Pro	Pro	Val	Arg	Leu	Gly	Ile	Gln	Leu	Leu	Pro	Gly	Val	Arg	290	295	300
His	Gly	Lys	Gly	Met	Tyr	Phe	Leu	Asn	Ser	Leu	Arg	Lys	Gln	Met	Thr	305	310	315
Ile	Thr	Lys	Ile	Lys	Ile	Lys	Ser	Pro	Arg	Glu	Pro	Tyr	Ile	Arg	Gln	325	330	335
Ile	Thr	Cys	Leu	Tyr	Asp	Val	Lys	Gly	Cys	Leu	Lys	Pro	Ser	His	Asn	340	345	350
Cys	Lys	Pro	Ala	Cys	Leu	Gly	Pro	Arg	His	Ala	Arg	Cys	Gln	His	Pro	355	360	365
Tyr	Lys	Phe	Pro	Ala	Val	Val	Pro	Lys	Lys	Lys	Ala	Pro	Val	Leu	Asn	370	375	380
Asn	Pro	Arg	Ala	Arg	Thr	Gln	Pro	His	Leu	Val	Gln	Leu	Pro	Leu	Tyr	385	390	395
Leu	Ala	Ala	Lys	His	His	Pro	Pro	Leu	Leu	Leu	Tyr	Leu	Pro	Leu	Gly	405	410	415
Leu	Gln	His	Leu	Pro	Asn	Cys	Leu	Gln	Cys	Gly	Leu	Tyr	Cys	Cys	His	420	425	430
Val	Trp	Cys	Arg	Lys	Ser	Leu	His	His	Pro	Arg	Gln	Pro	Leu	Ile	Ile	435	440	445
Gly	Lys	Tyr	Pro	Leu	Ile	Pro	Phe	Thr	Pro	Thr	Pro	Pro	Gln	His	Arg	450	455	460
Arg	Leu	Pro	Pro	Pro	Val	Pro	Arg	His	Gln	Ile	Glu	Ala	Arg	Cys	Glu	465	470	475
Leu	Ile	Ala	Ala	Leu	Thr	Arg	Arg	Lys	His	His	Thr	Cys	Ile	Arg	Phe	485	490	495
Pro	Pro	Phe	Gln	Leu	Tyr	Gly	Asp	Lys	Pro	Ala	Met	Gln	Leu	Pro	Lys	500	505	510
Gln	Leu	Arg	Pro	Thr	Gly	Phe	Ile	Thr	Lys	Glu	Pro	Pro	His	Lys	Trp	515	520	525
Ser	Pro	Gln	Pro	Pro	Pro	Asp	Thr	Lys	Gln	Pro	Leu	Ala	Glu	Lys	Ala	530	535	540
Val	Asp	Asp	Leu	Leu	Ser	Leu	Leu	Ala	Ser	Ser	Tyr	Tyr				545	550	555

<210> 9

<211> 939

<212> DNA

<213> Type A PWD circovirus

<220>

<221> CDS

<222> (1)..(936)

<400> 9

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Met Pro Ser Lys Lys Ser Gly Pro Gln Pro His Lys Arg Trp Val Phe	
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acc ctt aat aat cct tcc gag gag gag aaa aac aaa ata cgg gag ctt	96
Thr Leu Asn Asn Pro Ser Glu Glu Glu Lys Asn Lys Ile Arg Glu Leu	
20 25 30	
cca atc tcc ctt ttt gat tat ttt gtt tgt ggc gag gaa ggt ttg gaa	144
Pro Ile Ser Leu Phe Asp Tyr Phe Val Cys Gly Glu Glu Gly Leu Glu	
35 40 45	
gag ggt aga act cct cac ctc cag ggg ttt gcg aat ttt gct aag aag	192
Glu Gly Arg Thr Pro His Leu Gln Gly Phe Ala Asn Phe Ala Lys Lys	
50 55 60	
cag act ttt aac aag gtg aag tgg tat ttt ggt gcc cgc tgc cac atc	240
Gln Thr Phe Asn Lys Val Lys Trp Tyr Phe Gly Ala Arg Cys His Ile	
65 70 75 80	
gag aaa gcg aaa gga acc gac cag cag aat aaa gaa tac tgc agt aaa	288
Glu Lys Ala Lys Gly Thr Asp Gln Gln Asn Lys Glu Tyr Cys Ser Lys	
85 90 95	
gaa ggc cac ata ctt atc gag tgt gga gct ccg cgg aac cag ggg aag	336
Glu Gly His Ile Leu Ile Glu Cys Gly Ala Pro Arg Asn Gln Gly Lys	
100 105 110	
cgc agc gac ctg tct act gct gtg agt acc ctt ttg gag acg ggg tct	384
Arg Ser Asp Leu Ser Thr Ala Val Ser Thr Leu Leu Glu Thr Gly Ser	
115 120 125	
ttg gtg act gta gcc gag cag ttt cct gta acg tat gtg aga aat ttc	432
Leu Val Thr Val Ala Glu Gln Phe Pro Val Thr Tyr Val Arg Asn Phe	
130 135 140	
cgc ggg ctg gct gaa ctt ttg aaa gtg agc ggg aag atg cag cag cgt	480
Arg Gly Leu Ala Glu Leu Leu Lys Val Ser Gly Lys Met Gln Gln Arg	
145 150 155 160	

gat tgg aag aca gct gta cac gtc ata gtg ggc ccg ccc ggt tgt ggg	528
Asp Trp Lys Thr Ala Val His Val Ile Val Gly Pro Pro Gly Cys Gly	
165 170 175	
aag agc cag tgg gcc cgt aat ttt gct gag cct agg gac acc tac tgg	576
Lys Ser Gln Trp Ala Arg Asn Phe Ala Glu Pro Arg Asp Thr Tyr Trp	
180 185 190	
aag cct agt aga aat aag tgg tgg gat gga tat cat gga gaa gaa gtt	624
Lys Pro Ser Arg Asn Lys Trp Trp Asp Gly Tyr His Gly Glu Glu Val	
195 200 205	
gtt gtt ttg gat gat ttt tat ggc tgg tta cct tgg gat gat cta ctg	672
Val Val Leu Asp Asp Phe Tyr Gly Trp Leu Pro Trp Asp Asp Leu Leu	
210 215 220	
aga ctg tgt gac cgg tat cca ttg act gta gag act aaa ggg ggt act	720
Arg Leu Cys Asp Arg Tyr Pro Leu Thr Val Glu Thr Lys Gly Gly Thr	
225 230 235 240	
gtt cct ttt ttg gcc cgc agt att ttg att acc agc aat cag gcc ccc	768
Val Pro Phe Leu Ala Arg Ser Ile Leu Ile Thr Ser Asn Gln Ala Pro	
245 250 255	
cag gaa tgg tac tcc tca act gct gtc cca gct gta gaa gct ctc tat	816
Gln Glu Trp Tyr Ser Ser Thr Ala Val Pro Ala Val Glu Ala Leu Tyr	
260 265 270	
cgg agg att act act ttg caa ttt tgg aag act gct gga gaa caa tcc	864
Arg Arg Ile Thr Thr Leu Gln Phe Trp Lys Thr Ala Gly Glu Gln Ser	
275 280 285	
acg gag gta ccc gaa ggc cga ttt gaa gca gtg gac cca ccc tgt gcc	912
Thr Glu Val Pro Glu Gly Arg Phe Glu Ala Val Asp Pro Pro Cys Ala	
290 295 300	
ctt ttc cca tat aaa ata aat tac tga	939
Leu Phe Pro Tyr Lys Ile Asn Tyr	
305 310	

<210> 10

<211> 312

<212> PRT

<213> Type A PWD circovirus

<400> 10

Met	Pro	Ser	Lys	Lys	Ser	Gly	Pro	Gln	Pro	His	Lys	Arg	Trp	Val	Phe
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Thr	Leu	Asn	Asn	Pro	Ser	Glu	Glu	Glu	Lys	Asn	Lys	Ile	Arg	Glu	Leu	20	25	30	
Pro	Ile	Ser	Leu	Phe	Asp	Tyr	Phe	Val	Cys	Gly	Glu	Glu	Gly	Leu	Glu	35	40	45	
Glu	Gly	Arg	Thr	Pro	His	Leu	Gln	Gly	Phe	Ala	Asn	Phe	Ala	Lys	Lys	50	55	60	
Gln	Thr	Phe	Asn	Lys	Val	Lys	Trp	Tyr	Phe	Gly	Ala	Arg	Cys	His	Ile	65	70	75	80
Glu	Lys	Ala	Lys	Gly	Thr	Asp	Gln	Gln	Asn	Lys	Glu	Tyr	Cys	Ser	Lys	85	90	95	
Glu	Gly	His	Ile	Leu	Ile	Glu	Cys	Gly	Ala	Pro	Arg	Asn	Gln	Gly	Lys	100	105	110	
Arg	Ser	Asp	Leu	Ser	Thr	Ala	Val	Ser	Thr	Leu	Leu	Glu	Thr	Gly	Ser	115	120	125	
Leu	Val	Thr	Val	Ala	Glu	Gln	Phe	Pro	Val	Thr	Tyr	Val	Arg	Asn	Phe	130	135	140	
Arg	Gly	Leu	Ala	Glu	Leu	Leu	Lys	Val	Ser	Gly	Lys	Met	Gln	Gln	Arg	145	150	155	160
Asp	Trp	Lys	Thr	Ala	Val	His	Val	Ile	Val	Gly	Pro	Pro	Gly	Cys	Gly	165	170	175	
Lys	Ser	Gln	Trp	Ala	Arg	Asn	Phe	Ala	Glu	Pro	Arg	Asp	Thr	Tyr	Trp	180	185	190	
Lys	Pro	Ser	Arg	Asn	Lys	Trp	Trp	Asp	Gly	Tyr	His	Gly	Glu	Glu	Val	195	200	205	
Val	Val	Leu	Asp	Asp	Phe	Tyr	Gly	Trp	Leu	Pro	Trp	Asp	Asp	Leu	Leu	210	215	220	

Arg Leu Cys Asp Arg Tyr Pro Leu Thr Val Glu Thr Lys Gly Gly Thr
 225 230 235 240

Val Pro Phe Leu Ala Arg Ser Ile Leu Ile Thr Ser Asn Gln Ala Pro
 245 250 255

Gln Glu Trp Tyr Ser Ser Thr Ala Val Pro Ala Val Glu Ala Leu Tyr
 260 265 270

Arg Arg Ile Thr Thr Leu Gln Phe Trp Lys Thr Ala Gly Glu Gln Ser
 275 280 285

Thr Glu Val Pro Glu Gly Arg Phe Glu Ala Val Asp Pro Pro Cys Ala
 290 295 300

Leu Phe Pro Tyr Lys Ile Asn Tyr
 305 310

<210> 11

<211> 702

<212> DNA

<213> Type A PWD circovirus

<220>

<221> CDS

<222> (1)..(699)

<400> 11

atg	acg	tgg	cca	agg	agg	cgt	tac	cgc	aga	aga	cgg	acc	cgc	ccc	cgc	48
Met	Thr	Trp	Pro	Arg	Arg	Arg	Tyr	Arg	Arg	Arg	Arg	Thr	Arg	Pro	Arg	
1				5				10						15		

agc	cat	ctt	gga	aac	atc	ctc	cgg	aga	aga	cca	tat	ttg	gta	cac	ccc	96
Ser	His	Leu	Gly	Asn	Ile	Leu	Arg	Arg	Arg	Pro	Tyr	Leu	Val	His	Pro	
			20				25						30			

gcc	ttc	aga	aac	cgt	tac	aga	tgg	cgc	cga	aag	acg	ggt	atc	ttc	aat	144
Ala	Phe	Arg	Asn	Arg	Tyr	Arg	Trp	Arg	Arg	Lys	Thr	Gly	Ile	Phe	Asn	
		35					40					45				

tcc cgc ctt tct aga gaa ttt gta ctc acc ata aga gga gga cac tcg	192
Ser Arg Leu Ser Arg Glu Phe Val Leu Thr Ile Arg Gly Gly His Ser	
50 55 60	
cag cca tct tgg aat gtt aac gag ctg aga ttc aac atc ggc cag ttc	240
Gln Pro Ser Trp Asn Val Asn Glu Leu Arg Phe Asn Ile Gly Gln Phe	
65 70 75 80	
ctc ccc ccc tca ggc ggc acc aac ccc cta ccc cta cct ttc caa tac	288
Leu Pro Pro Ser Gly Gly Thr Asn Pro Leu Pro Leu Pro Phe Gln Tyr	
85 90 95	
tac cgt att aga aag gct aaa tat gaa ttt tac ccc aga gac ccc atc	336
Tyr Arg Ile Arg Lys Ala Lys Tyr Glu Phe Tyr Pro Arg Asp Pro Ile	
100 105 110	
acc tct aat caa aga ggt gtt ggg tcc act gtt gtt atc ttg gat gcc	384
Thr Ser Asn Gln Arg Gly Val Gly Ser Thr Val Val Ile Leu Asp Ala	
115 120 125	
aac ttt gta acc ccc tcc acc aac ttg gcc tat gac ccc tat att aac	432
Asn Phe Val Thr Pro Ser Thr Asn Leu Ala Tyr Asp Pro Tyr Ile Asn	
130 135 140	
tac tcc tcc cgc cac acc ata agg cag ccc ttt acc tac cac tcc agg	480
Tyr Ser Ser Arg His Thr Ile Arg Gln Pro Phe Thr Tyr His Ser Arg	
145 150 155 160	
tac ttc acc ccc aaa cca gag cta gac caa aca att gat tgg ttc cag	528
Tyr Phe Thr Pro Lys Pro Glu Leu Asp Gln Thr Ile Asp Trp Phe Gln	
165 170 175	
cca aat aat aaa aga aac cag ctg tgg ctc cat tta aat acc cac acc	576
Pro Asn Asn Lys Arg Asn Gln Leu Trp Leu His Leu Asn Thr His Thr	
180 185 190	
aat gtc gag cac aca ggc ctg ggc tat gcg ctc caa aat gca acc aca	624
Asn Val Glu His Thr Gly Leu Gly Tyr Ala Leu Gln Asn Ala Thr Thr	
195 200 205	
gcc caa aat tat gtg gta agg ttg act att tat gta caa ttc aga gaa	672
Ala Gln Asn Tyr Val Val Arg Leu Thr Ile Tyr Val Gln Phe Arg Glu	
210 215 220	
ttt atc ctg aaa gac cct cta aat gaa taa	702
Phe Ile Leu Lys Asp Pro Leu Asn Glu	
225 230	

<210> 12

<211> 233

<212> PRT

<213> Type A PWD circovirus

<400> 12

Met Thr Trp Pro Arg Arg Arg Tyr Arg Arg Arg Arg Thr Arg Pro Arg
1 5 10 15

Ser His Leu Gly Asn Ile Leu Arg Arg Arg Pro Tyr Leu Val His Pro
20 25 30

Ala Phe Arg Asn Arg Tyr Arg Trp Arg Arg Lys Thr Gly Ile Phe Asn
35 40 45

Ser Arg Leu Ser Arg Glu Phe Val Leu Thr Ile Arg Gly Gly His Ser
50 55 60

Gln Pro Ser Trp Asn Val Asn Glu Leu Arg Phe Asn Ile Gly Gln Phe
65 70 75 80

Leu Pro Pro Ser Gly Gly Thr Asn Pro Leu Pro Leu Pro Phe Gln Tyr
85 90 95

Tyr Arg Ile Arg Lys Ala Lys Tyr Glu Phe Tyr Pro Arg Asp Pro Ile
100 105 110

Thr Ser Asn Gln Arg Gly Val Gly Ser Thr Val Val Ile Leu Asp Ala
115 120 125

Asn Phe Val Thr Pro Ser Thr Asn Leu Ala Tyr Asp Pro Tyr Ile Asn
130 135 140

Tyr Ser Ser Arg His Thr Ile Arg Gln Pro Phe Thr Tyr His Ser Arg
145 150 155 160

Tyr Phe Thr Pro Lys Pro Glu Leu Asp Gln Thr Ile Asp Trp Phe Gln
165 170 175

Pro Asn Asn Lys Arg Asn Gln Leu Trp Leu His Leu Asn Thr His Thr
180 185 190

Asn Val Glu His Thr Gly Leu Gly Tyr Ala Leu Gln Asn Ala Thr Thr
 195 200 205

Ala Gln Asn Tyr Val Val Arg Leu Thr Ile Tyr Val Gln Phe Arg Glu
 210 215 220

Phe Ile Leu Lys Asp Pro Leu Asn Glu
 225 230

<210> 13

<211> 621

<212> DNA

<213> Type A PWD circovirus

<220>

<221> CDS

<222> (1) .. (618)

<400> 13

atg	ata	tcc	atc	cca	cca	ctt	att	tct	act	agg	ctt	cca	gta	ggt	gtc	48
Met	Ile	Ser	Ile	Pro	Pro	Leu	Ile	Ser	Thr	Arg	Leu	Pro	Val	Gly	Val	
1				5					10					15		

cct	agg	ctc	agc	aaa	att	acg	ggc	cca	ctg	gct	ctt	ccc	aca	acc	ggg	96
Pro	Arg	Leu	Ser	Lys	Ile	Thr	Gly	Pro	Leu	Ala	Leu	Pro	Thr	Thr	Gly	
			20					25					30			

cgg	gcc	cac	tat	gac	gtg	tac	agc	tgt	ctt	cca	atc	acg	ctg	ctg	cat	144
Arg	Ala	His	Tyr	Asp	Val	Tyr	Ser	Cys	Leu	Pro	Ile	Thr	Leu	Leu	His	
		35					40					45				

ctt	ccc	gct	cac	ttt	caa	aag	ttc	agc	cag	ccc	gcg	gaa	att	tct	cac	192
Leu	Pro	Ala	His	Phe	Gln	Lys	Phe	Ser	Gln	Pro	Ala	Glu	Ile	Ser	His	
	50					55					60					

ata	cgt	tac	agg	aaa	ctg	ctc	ggc	tac	agt	cac	caa	aga	ccc	cgt	ctc	240
Ile	Arg	Tyr	Arg	Lys	Leu	Leu	Gly	Tyr	Ser	His	Gln	Arg	Pro	Arg	Leu	
65					70					75					80	

caa	aag	ggt	act	cac	agc	agt	aga	cag	gtc	gct	gcg	ctt	ccc	ctg	gtt	288
Gln	Lys	Gly	Thr	His	Ser	Ser	Arg	Gln	Val	Ala	Ala	Leu	Pro	Leu	Val	
				85					90					95		

ccg cgg agc tcc aca ctc gat aag tat gtg gcc ttc ttt act gca gta	336
Pro Arg Ser Ser Thr Leu Asp Lys Tyr Val Ala Phe Phe Thr Ala Val	
100 105 110	
ttc ttt att ctg ctg gtc ggt tcc ttt cgc ttt ctc gat gtg gca gcg	384
Phe Phe Ile Leu Leu Val Gly Ser Phe Arg Phe Leu Asp Val Ala Ala	
115 120 125	
ggc acc aaa ata cca ctt cac ctt gtt aaa agt ctg ctt ctt agc aaa	432
Gly Thr Lys Ile Pro Leu His Leu Val Lys Ser Leu Leu Leu Ser Lys	
130 135 140	
att cgc aaa ccc ctg gag gtg agg agt tct acc ctc ttc caa acc ttc	480
Ile Arg Lys Pro Leu Glu Val Arg Ser Ser Thr Leu Phe Gln Thr Phe	
145 150 155 160	
ctc gcc aca aac aaa ata atc aaa aag gga gat tgg aag ctc ccg tat	528
Leu Ala Thr Asn Lys Ile Ile Lys Lys Gly Asp Trp Lys Leu Pro Tyr	
165 170 175	
ttt gtt ttt ctc ctc ctc gga agg att att aag ggt gaa cac cca cct	576
Phe Val Phe Leu Leu Leu Gly Arg Ile Ile Lys Gly Glu His Pro Pro	
180 185 190	
ctt atg ggg ttg cgg gcc gct ttt ctt gct tgg cat ttt cac tga	621
Leu Met Gly Leu Arg Ala Ala Phe Leu Ala Trp His Phe His	
195 200 205	

<210> 14

<211> 206

<212> PRT

<213> Type A PWD circovirus

<400> 14

Met Ile Ser Ile Pro Pro Leu Ile Ser Thr Arg Leu Pro Val Gly Val	
1 5 10 15	
Pro Arg Leu Ser Lys Ile Thr Gly Pro Leu Ala Leu Pro Thr Thr Gly	
20 25 30	
Arg Ala His Tyr Asp Val Tyr Ser Cys Leu Pro Ile Thr Leu Leu His	
35 40 45	
Leu Pro Ala His Phe Gln Lys Phe Ser Gln Pro Ala Glu Ile Ser His	
50 55 60	

Ile Arg Tyr Arg Lys Leu Leu Gly Tyr Ser His Gln Arg Pro Arg Leu
65 70 75 80

Gln Lys Gly Thr His Ser Ser Arg Gln Val Ala Ala Leu Pro Leu Val
85 90 95

Pro Arg Ser Ser Thr Leu Asp Lys Tyr Val Ala Phe Phe Thr Ala Val
100 105 110

Phe Phe Ile Leu Leu Val Gly Ser Phe Arg Phe Leu Asp Val Ala Ala
115 120 125

Gly Thr Lys Ile Pro Leu His Leu Val Lys Ser Leu Leu Leu Ser Lys
130 135 140

Ile Arg Lys Pro Leu Glu Val Arg Ser Ser Thr Leu Phe Gln Thr Phe
145 150 155 160

Leu Ala Thr Asn Lys Ile Ile Lys Lys Gly Asp Trp Lys Leu Pro Tyr
165 170 175

Phe Val Phe Leu Leu Leu Gly Arg Ile Ile Lys Gly Glu His Pro Pro
180 185 190

Leu Met Gly Leu Arg Ala Ala Phe Leu Ala Trp His Phe His
195 200 205

<210> 15

<211> 1767

<212> DNA

<213> Type B PWD circovirus

<220>

<221> CDS

<222> (1)..(111)

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<221> CDS

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<222> (757) .. (759)

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<221> CDS

<222> (763) .. (804)

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<221> CDS

<222> (808) .. (861)

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<222> (865) .. (984)

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<221> CDS

<222> (988)..(1173)

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<221> CDS

<222> (1177)..(1233)

<220>

<221> CDS

<222> (1237)..(1359)

<220>

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<220>

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<220>

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<222> (1741)..(1767)

<400> 15

acc agc gca ctt cgg cag cgg cag cac ctc ggc agc acc tca gca gca
Thr Ser Ala Leu Arg Gln Arg Gln His Leu Gly Ser Thr Ser Ala Ala
1 5 10 15

48

aca tgc cca gca aga aga atg gaa gaa gcg gac ccc aac ccc ata aaa	96
Thr Cys Pro Ala Arg Arg Met Glu Glu Ala Asp Pro Asn Pro Ile Lys	
20 25 30	
ggt ggg tgt tca ctc tga ata atc ctt ccg aag acg agc gca aga aaa	144
Gly Gly Cys Ser Leu Ile Ile Leu Pro Lys Thr Ser Ala Arg Lys	
35 40 45	
tac ggg atc ttc caa tat ccc tat ttg att att tta ttg ttg gcg agg	192
Tyr Gly Ile Phe Gln Tyr Pro Tyr Leu Ile Ile Leu Leu Leu Ala Arg	
50 55 60	
agg gta atg agg aag gac gaa cac ctc acc tcc agg ggt tcg cta att	240
Arg Val Met Arg Lys Asp Glu His Leu Thr Ser Arg Gly Ser Leu Ile	
65 70 75	
ttg tga aga agc aga ctt tta ata aag tga agt ggt att tgg gtg ccc	288
Leu Arg Ser Arg Leu Leu Ile Lys Ser Gly Ile Trp Val Pro	
80 85 90	
gct gcc aca tcg aga aag cga aag gaa cag atc agc aga ata aag aat	336
Ala Ala Thr Ser Arg Lys Arg Lys Glu Gln Ile Ser Arg Ile Lys Asn	
95 100 105	
act gca gta aag aag gca act tac tga tgg agt gtg gag ctc cta gat	384
Thr Ala Val Lys Lys Ala Thr Tyr Trp Ser Val Glu Leu Leu Asp	
110 115 120	
ctc agg gac aac gga gtg acc tgt cta ctg ctg tga gta cct tgt tgg	432
Leu Arg Asp Asn Gly Val Thr Cys Leu Leu Val Pro Cys Trp	
125 130 135	
aga gcg gga gtc tgg tga ccg ttg cag agc agc acc ctg taa cgt ttg	480
Arg Ala Gly Val Trp Pro Leu Gln Ser Ser Thr Leu Arg Leu	
140 145 150	
tca gaa att tcc gcg ggc tgg ctg aac ttt tga aag tga gcg gga aaa	528
Ser Glu Ile Ser Ala Gly Trp Leu Asn Phe Lys Ala Gly Lys	
155 160 165	
tgc aga agc gtg att gga aga cta atg tac acg tca ttg tgg ggc cac	576
Cys Arg Ser Val Ile Gly Arg Leu Met Tyr Thr Ser Leu Trp Gly His	
170 175 180	
ctg ggt gtg gta aaa gca aat ggg ctg cta att ttg cag acc cgg aaa	624
Leu Gly Val Val Lys Ala Asn Gly Leu Leu Ile Leu Gln Thr Arg Lys	
185 190 195	
cca cat act gga aac cac cta gaa aca agt ggt ggg atg gtt acc atg	672
Pro His Thr Gly Asn His Leu Glu Thr Ser Gly Gly Met Val Thr Met	
200 205 210 215	

gtg aag aag tgg ttg tta ttg atg act ttt atg gct ggc tgc cct ggg	720
Val Lys Lys Trp Leu Leu Leu Met Thr Phe Met Ala Gly Cys Pro Gly	
220 225 230	
atg atc tac tga gac tgt gtg atc gat atc cat tga ctg tag aga cta	768
Met Ile Tyr Asp Cys Val Ile Asp Ile His Leu Arg Leu	
235 240	
aag gtg gaa ctg tac ctt ttt tgg ccc gca gta ttc tga tta cca gca	816
Lys Val Glu Leu Tyr Leu Phe Trp Pro Ala Val Phe Leu Pro Ala	
245 250 255	
atc aga ccc cgt tgg aat ggt act cct caa ctg ctg tcc cag ctg tag	864
Ile Arg Pro Arg Trp Asn Gly Thr Pro Gln Leu Leu Ser Gln Leu	
260 265 270	
aag ctc ttt atc gga gga tta ctt cct tgg tat ttt gga aga atg cta	912
Lys Leu Phe Ile Gly Gly Leu Leu Pro Trp Tyr Phe Gly Arg Met Leu	
275 280 285 290	
cag aac aat cca cgg agg aag ggg gcc agt tcg tca ccc ttt ccc ccc	960
Gln Asn Asn Pro Arg Arg Lys Gly Ala Ser Ser Ser Pro Phe Pro Pro	
295 300 305	
cat gcc ctg aat ttc cat atg aaa taa att act gag tct ttt tta tca	1008
His Ala Leu Asn Phe His Met Lys Ile Thr Glu Ser Phe Leu Ser	
310 315 320	
ctt cgt aat ggt ttt tat tat tca tta agg gtt aag tgg ggg gtc ttt	1056
Leu Arg Asn Gly Phe Tyr Tyr Ser Leu Arg Val Lys Trp Gly Val Phe	
325 330 335	
aaa att aaa ttc tct gaa ttg tac ata cat ggt tac acg gat att gta	1104
Lys Ile Lys Phe Ser Glu Leu Tyr Ile His Gly Tyr Thr Asp Ile Val	
340 345 350	
ttc ctg gtc gta tat act gtt ttc gaa cgc agt gcc gag gcc tac gtg	1152
Phe Leu Val Val Tyr Thr Val Phe Glu Arg Ser Ala Glu Ala Tyr Val	
355 360 365	
gtc tac att tcc agc agt ttg tag tct cag cca cag ctg gtt tct ttt	1200
Val Tyr Ile Ser Ser Ser Leu Ser Gln Pro Gln Leu Val Ser Phe	
370 375 380	
gtt gtt tgg ttg gaa gta atc aat agt gaa atc tag gac agg ttt ggg	1248
Val Val Trp Leu Glu Val Ile Asn Ser Glu Ile Asp Arg Phe Gly	
385 390 395	
ggt aaa gta ccg gga gtg gta gga gaa ggg ctg ggt tat ggt atg gcg	1296
Gly Lys Val Pro Gly Val Val Gly Glu Gly Leu Gly Tyr Gly Met Ala	
400 405 410 415	
gga gga gta gtt tac ata ggg gtc ata ggt gag ggc tgt ggc ctt tgt	1344
Gly Gly Val Val Tyr Ile Gly Val Ile Gly Glu Gly Cys Gly Leu Cys	
420 425 430	

tac	aaa	gtt	atc	atc	taa	aat	aac	agc	act	gga	gcc	cac	tcc	cct	gtc	1392
Tyr	Lys	Val	Ile	Ile		Asn	Asn	Ser	Thr	Gly	Ala	His	Ser	Pro	Val	
			435						440					445		

acc	ctg	ggg	gat	cgg	gga	gca	ggg	cca	gaa	ttc	aac	ctt	aac	ctt	tct	1440
Thr	Leu	Gly	Asp	Arg	Gly	Ala	Gly	Pro	Glu	Phe	Asn	Leu	Asn	Leu	Ser	
			450					455					460			

tat	tct	gta	gta	ttc	aaa	ggg	cac	aga	gcg	ggg	gtt	tga	ccc	ccc	tcc	1488
Tyr	Ser	Val	Val	Phe	Lys	Gly	His	Arg	Ala	Gly	Val		Pro	Pro	Ser	
		465					470						475			

tgg	ggg	aag	aaa	gtc	att	aat	att	gaa	tct	cat	cat	gtc	cac	cgc	cca	1536
Trp	Gly	Lys	Lys	Val	Ile	Asn	Ile	Glu	Ser	His	His	Val	His	Arg	Pro	
		480					485					490				

gga	ggg	cgt	tct	gac	tgt	ggg	tcg	ctt	gac	agt	ata	tcc	gaa	ggg	gcg	1584
Gly	Gly	Arg	Ser	Asp	Cys	Gly	Ser	Leu	Asp	Ser	Ile	Ser	Glu	Gly	Ala	
	495					500				505						

gga	gag	gcg	ggg	gtt	gaa	gat	gcc	att	ttt	cct	tct	cca	gcg	gta	acg	1632
Gly	Glu	Ala	Gly	Val	Glu	Asp	Ala	Ile	Phe	Pro	Ser	Pro	Ala	Val	Thr	
510					515					520					525	

gtg	gcg	ggg	gtg	gac	gag	cca	ggg	gcg	gcg	gcg	gag	gat	ctg	gcc	aag	1680
Val	Ala	Gly	Val	Asp	Glu	Pro	Gly	Ala	Ala	Ala	Glu	Asp	Leu	Ala	Lys	
				530					535					540		

atg	gct	gcg	ggg	gcg	gtg	tct	tct	tct	tcg	gta	acg	cct	cct	tgg	ata	1728
Met	Ala	Ala	Gly	Ala	Val	Ser	Ser	Ser	Ser	Val	Thr	Pro	Pro	Trp	Ile	
			545					550					555			

cgt	cat	atc	tga	aaa	cga	aag	aag	tgc	gct	gta	agt	att				1767
Arg	His	Ile		Lys	Arg	Lys	Lys	Cys	Ala	Val	Ser	Ile				
		560						565								

<210> 16

<211> 569

<212> PRT

<213> Type B PWD circovirus

<400> 16

Thr	Ser	Ala	Leu	Arg	Gln	Arg	Gln	His	Leu	Gly	Ser	Thr	Ser	Ala	Ala	
1				5					10					15		

Thr Cys Pro Ala Arg Arg Met Glu Glu Ala Asp Pro Asn Pro Ile Lys
20 25 30

Gly Gly Cys Ser Leu Ile Ile Leu Pro Lys Thr Ser Ala Arg Lys Tyr
35 40 45

Gly Ile Phe Gln Tyr Pro Tyr Leu Ile Ile Leu Leu Leu Ala Arg Arg
50 55 60

Val Met Arg Lys Asp Glu His Leu Thr Ser Arg Gly Ser Leu Ile Leu
65 70 75 80

Arg Ser Arg Leu Leu Ile Lys Ser Gly Ile Trp Val Pro Ala Ala Thr
85 90 95

Ser Arg Lys Arg Lys Glu Gln Ile Ser Arg Ile Lys Asn Thr Ala Val
100 105 110

Lys Lys Ala Thr Tyr Trp Ser Val Glu Leu Leu Asp Leu Arg Asp Asn
115 120 125

Gly Val Thr Cys Leu Leu Leu Val Pro Cys Trp Arg Ala Gly Val Trp
130 135 140

Pro Leu Gln Ser Ser Thr Leu Arg Leu Ser Glu Ile Ser Ala Gly Trp
145 150 155 160

Leu Asn Phe Lys Ala Gly Lys Cys Arg Ser Val Ile Gly Arg Leu Met
165 170 175

Tyr Thr Ser Leu Trp Gly His Leu Gly Val Val Lys Ala Asn Gly Leu
180 185 190

Leu Ile Leu Gln Thr Arg Lys Pro His Thr Gly Asn His Leu Glu Thr
195 200 205

Ser Gly Gly Met Val Thr Met Val Lys Lys Trp Leu Leu Leu Met Thr
210 215 220

Phe Met Ala Gly Cys Pro Gly Met Ile Tyr Asp Cys Val Ile Asp Ile
225 230 235 240

His Leu Arg Leu Lys Val Glu Leu Tyr Leu Phe Trp Pro Ala Val Phe
 245 250 255

Leu Pro Ala Ile Arg Pro Arg Trp Asn Gly Thr Pro Gln Leu Leu Ser
 260 265 270

Gln Leu Lys Leu Phe Ile Gly Gly Leu Leu Pro Trp Tyr Phe Gly Arg
 275 280 285

Met Leu Gln Asn Asn Pro Arg Arg Lys Gly Ala Ser Ser Ser Pro Phe
 290 295 300

Pro Pro His Ala Leu Asn Phe His Met Lys Ile Thr Glu Ser Phe Leu
 305 310 315 320

Ser Leu Arg Asn Gly Phe Tyr Tyr Ser Leu Arg Val Lys Trp Gly Val
 325 330 335

Phe Lys Ile Lys Phe Ser Glu Leu Tyr Ile His Gly Tyr Thr Asp Ile
 340 345 350

Val Phe Leu Val Val Tyr Thr Val Phe Glu Arg Ser Ala Glu Ala Tyr
 355 360 365

Val Val Tyr Ile Ser Ser Ser Leu Ser Gln Pro Gln Leu Val Ser Phe
 370 375 380

Val Val Trp Leu Glu Val Ile Asn Ser Glu Ile Asp Arg Phe Gly Gly
 385 390 395 400

Lys Val Pro Gly Val Val Gly Glu Gly Leu Gly Tyr Gly Met Ala Gly
 405 410 415

Gly Val Val Tyr Ile Gly Val Ile Gly Glu Gly Cys Gly Leu Cys Tyr
 420 425 430

Lys Val Ile Ile Asn Asn Ser Thr Gly Ala His Ser Pro Val Thr Leu
 435 440 445

Gly Asp Arg Gly Ala Gly Pro Glu Phe Asn Leu Asn Leu Ser Tyr Ser
 450 455 460

Val Val Phe Lys Gly His Arg Ala Gly Val Pro Pro Ser Trp Gly Lys
 465 470 475 480

Lys Val Ile Asn Ile Glu Ser His His Val His Arg Pro Gly Gly Arg
 485 490 495

Ser Asp Cys Gly Ser Leu Asp Ser Ile Ser Glu Gly Ala Gly Glu Ala
 500 505 510

Gly Val Glu Asp Ala Ile Phe Pro Ser Pro Ala Val Thr Val Ala Gly
 515 520 525

Val Asp Glu Pro Gly Ala Ala Ala Glu Asp Leu Ala Lys Met Ala Ala
 530 535 540

Gly Ala Val Ser Ser Ser Ser Val Thr Pro Pro Trp Ile Arg His Ile
 545 550 555 560

Lys Arg Lys Lys Cys Ala Val Ser Ile
 565

<210> 17

<211> 542

<212> PRT

<213> Type B PWD circovirus

<400> 17

Pro Ala His Phe Gly Ser Gly Ser Thr Ser Ala Ala Pro Gln Gln Gln
 1 5 10 15

His Ala Gln Gln Glu Glu Trp Lys Lys Arg Thr Pro Thr Pro Lys Val
 20 25 30

Gly Val His Ser Glu Ser Phe Arg Arg Arg Ala Gln Glu Asn Thr Gly
 35 40 45

Ser Ser Asn Ile Pro Ile Leu Phe Tyr Cys Trp Arg Gly Gly Gly Arg
 50 55 60

Thr	Asn	Thr	Ser	Pro	Pro	Gly	Val	Arg	Phe	Cys	Glu	Glu	Ala	Asp	Phe	65	70	75	80
Ser	Glu	Val	Val	Phe	Gly	Cys	Pro	Leu	Pro	His	Arg	Glu	Ser	Glu	Arg		85	90	95
Asn	Arg	Ser	Ala	Glu	Arg	Ile	Leu	Gln	Arg	Arg	Gln	Leu	Thr	Asp	Gly	100	105		110
Val	Trp	Ser	Ser	Ile	Ser	Gly	Thr	Thr	Glu	Pro	Val	Tyr	Cys	Cys	Glu	115	120		125
Tyr	Leu	Val	Gly	Glu	Arg	Glu	Ser	Gly	Asp	Arg	Cys	Arg	Ala	Ala	Pro	130	135	140	
Cys	Asn	Val	Cys	Gln	Lys	Phe	Pro	Arg	Ala	Gly	Thr	Phe	Glu	Ser	Glu	145	150	155	160
Arg	Glu	Asn	Ala	Glu	Ala	Cys	Thr	Arg	His	Cys	Gly	Ala	Thr	Trp	Val		165	170	175
Trp	Lys	Gln	Met	Gly	Cys	Phe	Cys	Arg	Pro	Gly	Asn	His	Ile	Leu	Glu	180	185		190
Thr	Thr	Lys	Gln	Val	Val	Gly	Trp	Leu	Pro	Trp	Arg	Ser	Gly	Cys	Tyr	195	200	205	
Leu	Leu	Trp	Leu	Ala	Ala	Leu	Gly	Ser	Thr	Glu	Thr	Val	Ser	Ile	Ser	210	215	220	
Ile	Asp	Cys	Arg	Asp	Arg	Trp	Asn	Cys	Thr	Phe	Phe	Gly	Pro	Gln	Tyr	225	230	235	240
Ser	Asp	Tyr	Gln	Gln	Ser	Asp	Pro	Val	Gly	Met	Val	Leu	Leu	Asn	Cys		245	250	255
Cys	Pro	Ser	Cys	Arg	Ser	Ser	Leu	Ser	Glu	Asp	Tyr	Phe	Leu	Gly	Ile	260	265		270
Leu	Glu	Glu	Cys	Tyr	Arg	Thr	Ile	His	Gly	Gly	Arg	Gly	Pro	Val	Arg	275	280	285	
His	Pro	Phe	Pro	Pro	Met	Pro	Asn	Lys	Leu	Leu	Ser	Leu	Phe	Tyr	His	290	295	300	
Phe	Val	Met	Val	Phe	Ile	Ile	His	Gly	Leu	Ser	Gly	Gly	Ser	Leu	Lys	305	310	315	320
Leu	Asn	Ser	Leu	Asn	Cys	Thr	Tyr	Met	Val	Thr	Arg	Ile	Leu	Tyr	Ser		325	330	335
Trp	Ser	Tyr	Ile	Leu	Phe	Ser	Asn	Ala	Val	Pro	Arg	Pro	Thr	Trp	Ser	340	345		350

Thr Phe Pro Ala Val Cys Ser Leu Ser His Ser Trp Phe Leu Leu Leu
 355 360 365
 Phe Gly Trp Lys Ser Ile Val Lys Ser Arg Thr Gly Leu Gly Val Lys
 370 375 380
 Tyr Arg Glu Trp Glu Lys Gly Trp Val Met Val Trp Arg Glu Glu Val
 385 390 395 400
 Arg Ala Val Ala Phe Val Thr Lys Leu Ser Ser Lys Ile Thr Ala Leu
 405 410 415
 Glu Pro Thr Pro Leu Ser Pro Trp Val Ile Gly Glu Gln Gly Gln Asn
 420 425 430
 Ser Thr Leu Thr Phe Leu Ile Leu Tyr Ser Lys Gly Thr Glu Arg Gly
 435 440 445
 Phe Asp Pro Pro Pro Gly Gly Arg Lys Ser Leu Ile Leu Asn Leu Ile
 450 455 460
 Met Ser Thr Ala Gln Glu Gly Val Leu Thr Val Val Arg Leu Thr Val
 465 470 475 480
 Tyr Pro Lys Val Arg Glu Arg Arg Val Leu Lys Met Pro Phe Phe Leu
 485 490 495
 Leu Gln Arg Arg Trp Arg Gly Trp Thr Ser Gln Gly Arg Arg Arg Arg
 500 505 510
 Ile Trp Pro Arg Trp Leu Arg Gly Arg Cys Leu Leu Leu Arg Arg Leu
 515 520 525
 Leu Gly Tyr Val Ile Ser Glu Asn Glu Arg Ser Ala Leu Val
 530 535 540

<210> 18

<211> 566

<212> PRT

<213> Type B PWD circovirus

<400> 18

Gln Arg Thr Ser Ala Ala Ala Ala Pro Arg Gln His Leu Ser Ser Asn
 1 5 10 15
 Met Pro Ser Lys Lys Asn Gly Arg Ser Gly Pro Gln Pro His Lys Arg
 20 25 30

Trp	Val	Phe	Thr	Leu	Asn	Asn	Pro	Ser	Glu	Asp	Glu	Arg	Lys	Lys	Ile
	35						40					45			
Arg	Asp	Leu	Pro	Ile	Ser	Leu	Phe	Asp	Tyr	Phe	Ile	Val	Gly	Glu	Glu
	50					55					60				
Gly	Asn	Glu	Glu	Gly	Arg	Thr	Pro	His	Leu	Gln	Gly	Phe	Ala	Asn	Phe
65					70					75					80
Val	Lys	Lys	Gln	Thr	Phe	Asn	Lys	Val	Lys	Trp	Tyr	Leu	Gly	Ala	Arg
				85					90					95	
Cys	His	Ile	Glu	Lys	Ala	Lys	Gly	Thr	Asp	Gln	Gln	Asn	Lys	Glu	Tyr
			100					105					110		
Cys	Ser	Lys	Glu	Gly	Asn	Leu	Leu	Met	Glu	Cys	Gly	Ala	Pro	Arg	Ser
		115					120					125			
Gln	Gly	Gln	Arg	Ser	Asp	Leu	Ser	Thr	Ala	Val	Ser	Thr	Leu	Leu	Glu
	130					135					140				
Ser	Gly	Ser	Leu	Val	Thr	Val	Ala	Glu	Gln	His	Pro	Val	Thr	Phe	Val
145					150					155					160
Arg	Asn	Phe	Arg	Gly	Leu	Ala	Glu	Leu	Leu	Lys	Val	Ser	Gly	Lys	Met
				165					170					175	
Gln	Lys	Arg	Asp	Trp	Lys	Thr	Asn	Val	His	Val	Ile	Val	Gly	Pro	Pro
			180					185					190		
Gly	Cys	Gly	Lys	Ser	Lys	Trp	Ala	Ala	Asn	Phe	Ala	Asp	Pro	Glu	Thr
		195					200					205			
Thr	Tyr	Trp	Lys	Pro	Pro	Arg	Asn	Lys	Trp	Trp	Asp	Gly	Tyr	His	Gly
	210					215					220				
Glu	Glu	Val	Val	Val	Ile	Asp	Asp	Phe	Tyr	Gly	Trp	Leu	Pro	Trp	Asp
225					230					235					240
Asp	Leu	Leu	Arg	Leu	Cys	Asp	Arg	Tyr	Pro	Leu	Thr	Val	Glu	Thr	Lys
				245					250					255	
Gly	Gly	Thr	Val	Pro	Phe	Leu	Ala	Arg	Ser	Ile	Leu	Ile	Thr	Ser	Asn
			260					265					270		
Gln	Thr	Pro	Leu	Glu	Trp	Tyr	Ser	Ser	Thr	Ala	Val	Pro	Ala	Val	Glu
		275					280					285			
Ala	Leu	Tyr	Arg	Arg	Ile	Thr	Ser	Leu	Val	Phe	Trp	Lys	Asn	Ala	Thr
	290					295					300				
Glu	Gln	Ser	Thr	Glu	Glu	Gly	Gly	Gln	Phe	Val	Thr	Leu	Ser	Pro	Pro
305					310					315					320

Cys	Pro	Glu	Phe	Pro	Tyr	Glu	Ile	Asn	Tyr	Val	Phe	Phe	Ile	Thr	Ser	325	330	335
Trp	Phe	Leu	Leu	Phe	Ile	Lys	Gly	Val	Gly	Gly	Leu	Ile	Val	His	Thr	340	345	350
Trp	Leu	His	Gly	Tyr	Cys	Ile	Pro	Gly	Arg	Ile	Tyr	Cys	Phe	Arg	Thr	355	360	365
Gln	Cys	Arg	Gly	Leu	Arg	Gly	Leu	His	Phe	Gln	Gln	Phe	Val	Val	Ser	370	375	380
Ala	Thr	Ala	Gly	Phe	Phe	Cys	Cys	Leu	Val	Gly	Ser	Asn	Gln	Asn	Leu	385	390	400
Gly	Gln	Val	Trp	Gly	Ser	Thr	Gly	Ser	Gly	Arg	Arg	Arg	Ala	Gly	Leu	405	410	415
Trp	Tyr	Gly	Gly	Arg	Ser	Ser	Leu	His	Arg	Gly	His	Arg	Gly	Leu	Trp	420	425	430
Pro	Leu	Leu	Gln	Ser	Tyr	His	Leu	Lys	Gln	His	Trp	Ser	Pro	Leu	Pro	435	440	445
Cys	His	Pro	Gly	Ser	Gly	Ser	Arg	Ala	Arg	Ile	Gln	Pro	Pro	Phe	Leu	450	455	460
Phe	Cys	Ser	Ile	Gln	Arg	Ala	Gln	Ser	Gly	Gly	Leu	Thr	Pro	Leu	Leu	465	470	475
Gly	Glu	Glu	Ser	His	Ile	Ser	Ser	Cys	Pro	Pro	Pro	Arg	Arg	Ala	Phe	485	490	495
Leu	Trp	Phe	Ala	Gln	Tyr	Ile	Arg	Arg	Cys	Gly	Arg	Gly	Gly	Cys	Arg	500	505	510
Cys	His	Phe	Ser	Phe	Ser	Ser	Gly	Asn	Gly	Gly	Gly	Gly	Gly	Arg	Ala	515	520	525
Arg	Gly	Gly	Gly	Gly	Gly	Ser	Gly	Gln	Asp	Gly	Cys	Gly	Gly	Gly	Val	530	535	540
Phe	Phe	Phe	Gly	Asn	Ala	Ser	Leu	Asp	Thr	Ser	Tyr	Leu	Lys	Thr	Lys	545	550	555
Glu	Val	Arg	Cys	Lys	Tyr											565		

<210> 19

<211> 1767

<212> DNA

<213> Type B PWD circovirus

<400> 19

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agaagaagac	accgcccccg	cagccatctt	ggccagatcc	tccgccgccg	cccctggctc	120
gtccaccccc	gccaccgtta	ccgctggaga	aggaaaaatg	gcattcttcaa	cacccgcctc	180
tcccgcacct	tcggatatac	tgtcaagcga	accacagtca	gaacgcctc	ctggggcggtg	240
gacatgatga	gattcaatat	taatgacttt	cttccccccag	gagggggggtc	aaacccccgc	300
tctgtgcctt	ttgaatacta	cagaataaga	aagggttaagg	ttgaattctg	gccctgctcc	360
ccgatcacc	agggtgacag	gggagtgggc	tccagtgcctg	ttatttttaga	tgataacttt	420
gtaacaaagg	ccacagccct	cacctatgac	ccctatgtaa	actactcctc	ccgccatacc	480
ataacccagc	ccttctccta	ccactcccgg	tacttttacc	ccaaacctgt	cctagatttc	540
actattgatt	acttccaacc	aaacaacaaa	agaaaccagc	tgtggctgag	actacaaact	600
gctggaaatg	tagaccacgt	aggcctcggc	actgcgttcg	aaaacagtat	atacgaccag	660
gaatacaata	tccgtgtaac	catgtatgta	caattcagag	aattttaattt	taaagacccc	720
ccacttaacc	cttaatgaat	aataaaaacc	attacgaagt	gataaaaaag	actcagtaat	780
ttatttcata	tggaaattca	gggcatgggg	gggaaagggg	gacgaactgg	cccccttcct	840
ccgtggattg	ttctgtagca	ttctttccaa	ataccaagga	agtaatcctc	cgataaagag	900
cttctacagc	tgggacagca	gttgaggagt	accattccaa	cgggggtctga	ttgctggtaa	960
tcagaatact	gcggggccaa	aaaggtacag	ttccaccttt	agtctctaca	gtcaatggat	1020
atcgatcaca	cagtctcagt	agatcatccc	agggcagcca	gccataaaag	tcatcaataa	1080
caaccacttc	ttcaccatgg	taaccatccc	accacttggt	tctaggtggg	ttccagtatg	1140
tggtttccgg	gtctgcaaaa	ttagcagccc	atttgctttt	accacacca	ggtggcccca	1200
caatgacgtg	tacattagtc	ttccaatcac	gcttctgcat	tttcccgcctc	actttcaaaa	1260
gttcagccag	ccgcgggaaa	tttctgacaa	acgttacagg	gtgctgctct	gcaacgggtca	1320
ccagactccc	gctctccaac	aagggtactca	cagcagtaga	caggtcactc	cgttgtccct	1380
gagatctagg	agctccacac	tccatcagta	agttgccttc	tttactgcag	tattctttat	1440
tctgctgata	tgttcccttc	gctttctcga	tgtggcagcg	ggcacccaaa	taccacttca	1500
ctttattaaa	agtctgcttc	ttcacaaaat	tagcgaaccc	ctggaggtga	ggtgttcgtc	1560

cttcctcatt accctcctcg ccaacaataa aataatcaaa tagggatatt ggaagatccc 1620
gtattttctt gcgctcgtct tcggaaggat tattcagagt gaacacccac cttttatggg 1680
gttgggggtcc gcttcttcca ttcttcttgc tgggcatggt gctgctgagg tgctgccgag 1740
gtgctgccgc tgccgaagtg cgctgggt 1767

<210> 20

<211> 567

<212> PRT

<213> Type B PWD circovirus

<400> 20

Gly	Ala	Cys	Lys	Pro	Leu	Pro	Leu	Val	Glu	Ala	Ala	Gly	Cys	Cys	Cys	
1				5					10					15		
Ala	Trp	Cys	Ser	Ser	His	Phe	Phe	Arg	Val	Gly	Val	Gly	Tyr	Phe	Thr	
			20					25					30			
Pro	Thr	Glu	Ser	Tyr	Asp	Lys	Arg	Leu	Arg	Ala	Cys	Ser	Phe	Val	Pro	
		35					40					45				
Asp	Glu	Leu	Ile	Gly	Ile	Gln	Asn	Asn	Gln	Gln	Arg	Pro	Pro	Tyr	His	
	50					55					60					
Pro	Leu	Val	Phe	Val	Glu	Gly	Gly	Pro	Thr	Arg	Asn	Gln	Ser	Ser	Ala	
65					70					75					80	
Ser	Lys	Tyr	Leu	Ser	Thr	Thr	Asn	Pro	His	Gly	Ser	Gly	Cys	Arg	Ser	
			85					90						95		
Leu	Ser	Leu	Phe	Leu	Asp	Ala	Ser	Tyr	Leu	Ile	Ser	Cys	Tyr	Leu	Leu	
			100					105					110			
Cys	Ser	Val	Ser	Pro	Thr	His	Leu	Glu	Ile	Glu	Pro	Val	Val	Ser	His	
		115					120					125				
Gly	Thr	Gln	Gln	Ser	Tyr	Arg	Thr	Pro	Ser	Arg	Ser	Asp	Pro	Ser	Arg	
	130					135					140					
Gln	Leu	Ala	Ala	Gly	Gln	Leu	Thr	Gln	Phe	Asn	Gly	Arg	Ala	Pro	Gln	
145					150					155					160	
Val	Lys	Ser	Leu	Ser	Arg	Ser	Phe	Ala	Ser	Ala	His	Asn	Ser	Ser	His	
			165					170						175		

Val	Arg	Gln	Pro	Ala	Val	Gln	Thr	His	Tyr	Phe	Cys	Ile	Pro	Gln	Asn			
			180					185					190					
Gln	Leu	Gly	Pro	Phe	Trp	Met	Ser	Ser	Val	Val	Phe	Cys	Thr	Thr	Pro			
		195					200					205						
His	Asn	Gly	His	His	Leu	Leu	Pro	Gln	Gln	His	Ser	Lys	His	Ser	Ala			
	210					215					220							
Ala	Arg	Pro	His	Asp	Val	Ser	Val	Thr	His	Asp	Ile	Asp	Met	Ser	Gln			
225					230					235					240			
Leu	Ser	Leu	His	Phe	Gln	Val	Lys	Lys	Pro	Gly	Cys	Tyr	Glu	Ser	Trp			
				245					250					255				
Cys	Asp	Ser	Gly	Thr	Pro	Ile	Thr	Ser	Arg	Leu	Gln	Gln	Gly	Leu	Gln			
			260					265					270					
Leu	Leu	Glu	Lys	Asp	Ser	Ser	Lys	Arg	Pro	Ile	Lys	Ser	Ser	His	Leu			
		275					280					285						
Val	Ile	Trp	Pro	Pro	Leu	Pro	Gly	Thr	Arg	Gly	Lys	Gly	Gly	Met	Gly			
	290					295					300							
Gln	Ile	Glu	Met	His	Phe	Leu	Asn	Ser	Leu	Arg	Lys	Lys	Thr	Ile	Thr			
305					310					315					320			
Lys	Ile	Ile	Pro	Asn	Leu	Pro	Pro	Asp	Lys	Phe	Asn	Phe	Glu	Arg	Phe			
				325				330						335				
Gln	Val	Tyr	Met	Thr	Val	Arg	Ile	Asn	Tyr	Glu	Gln	Asp	Tyr	Ile	Ser			
			340					345					350					
Asn	Glu	Phe	Ala	Thr	Gly	Leu	Gly	Val	His	Asp	Val	Asn	Gly	Ala	Thr			
		355					360					365						
Gln	Leu	Arg	Leu	Trp	Leu	Gln	Asn	Arg	Lys	Asn	Asn	Pro	Gln	Phe	Tyr			
	370					375					380							
Asp	Ile	Thr	Phe	Asp	Leu	Val	Pro	Lys	Pro	Thr	Phe	Tyr	Arg	Ser	His			
385					390					395					400			
Tyr	Ser	Phe	Pro	Gln	Thr	Ile	Thr	His	Arg	Ser	Ser	Tyr	Asn	Val	Tyr			
				405				410						415				
Pro	Asp	Tyr	Thr	Leu	Ala	Thr	Ala	Lys	Thr	Val	Pro	Asn	Asp	Asp	Leu			
			420					425					430					
Ile	Val	Ala	Ser	Ser	Gly	Val	Gly	Arg	Asp	Gly	Gln	Thr	Ile	Pro	Ser			
		435					440					445						
Cys	Pro	Trp	Phe	Glu	Val	Lys	Val	Lys	Arg	Ile	Arg	Tyr	Tyr	Glu	Phe			
	450					455					460							

Pro Val Ser Arg Pro Asn Ser Gly Gly Gly Pro Pro Leu Phe Asp Asn
 465 470 475 480
 Ile Asn Phe Arg Met Met Asp Val Ala Trp Ser Pro Thr Arg Val Thr
 485 490 495
 Thr Arg Lys Val Thr Tyr Gly Phe Thr Arg Ser Leu Arg Thr Asn Phe
 500 505 510
 Ile Gly Asn Lys Arg Arg Trp Arg Tyr Arg His Arg Pro His Val Leu
 515 520 525
 Trp Pro Arg Arg Arg Leu Ile Gln Gly Leu His Ser Arg Pro Arg His
 530 535 540
 Arg Arg Arg Arg Tyr Arg Arg Arg Pro Tyr Thr Met Asp Ser Phe Ser
 545 550 555 560
 Leu Leu Ala Ser Tyr Thr Asn
 565

<210> 21

<211> 566

<212> PRT

<213> Type B PWD circovirus

<400> 21

Trp Arg Val Glu Ala Ala Ala Ala Gly Arg Cys Cys Arg Leu Leu Leu
 1 5 10 15
 Met Gly Leu Leu Phe Phe Pro Leu Leu Pro Gly Trp Gly Trp Leu Leu
 20 25 30
 His Thr Asn Val Arg Phe Leu Gly Glu Ser Ser Ser Arg Leu Phe Ile
 35 40 45
 Arg Ser Arg Gly Ile Asp Arg Asn Ser Lys Ile Thr Pro Ser Ser Pro
 50 55 60
 Leu Ser Ser Pro Arg Val Gly Arg Trp Pro Asn Ala Leu Lys Thr Phe
 65 70 75 80
 Phe Cys Val Lys Leu Leu Thr Phe His Tyr Lys Pro Ala Arg Gln Trp
 85 90 95
 Met Ser Phe Ala Phe Pro Val Ser Cys Phe Leu Ser Tyr Gln Leu Leu
 100 105 110

Ser	Pro	Leu	Lys	Ser	Ile	Ser	His	Pro	Ala	Gly	Leu	Asp	Pro	Cys	Arg	115	120	125
Leu	Ser	Arg	Asp	Val	Ala	Thr	Leu	Val	Lys	Asn	Ser	Leu	Pro	Leu	Arg	130	135	140
Thr	Val	Thr	Ala	Ser	Cys	Cys	Gly	Thr	Val	Asn	Thr	Leu	Phe	Lys	Arg	145	150	155
Pro	Ser	Ala	Ser	Ser	Lys	Phe	Thr	Leu	Pro	Phe	Ile	Cys	Phe	Arg	Ser	165	170	175
Gln	Phe	Val	Leu	Thr	Cys	Thr	Met	Thr	Pro	Gly	Gly	Pro	His	Pro	Leu	180	185	190
Leu	Leu	His	Ala	Ala	Leu	Lys	Ala	Ser	Gly	Ser	Val	Val	Tyr	Gln	Phe	195	200	205
Gly	Gly	Leu	Phe	Leu	His	His	Ser	Pro	Trp	Pro	Ser	Ser	Thr	Thr	Thr	210	215	220
Ile	Ser	Ser	Lys	Pro	Gln	Ser	Gly	Gln	Ser	Ser	Arg	Ser	Leu	Ser	His	225	230	235
Ser	Arg	Tyr	Gly	Asn	Val	Thr	Ser	Val	Leu	Pro	Pro	Val	Thr	Gly	Lys	245	250	255
Lys	Ala	Arg	Leu	Ile	Arg	Ile	Val	Leu	Leu	Val	Gly	Asn	Ser	His	Tyr	260	265	270
Glu	Glu	Val	Ala	Thr	Gly	Ala	Thr	Ser	Ala	Arg	Arg	Leu	Ile	Val	Glu	275	280	285
Lys	Thr	Asn	Gln	Phe	Phe	Ala	Val	Ser	Cys	Asp	Val	Ser	Ser	Pro	Pro	290	295	300
Trp	Asn	Thr	Val	Arg	Glu	Gly	Gly	His	Gly	Ser	Asn	Gly	Tyr	Ser	Ile	305	310	315
Phe	Gln	Thr	Lys	Lys	Ile	Val	Glu	Tyr	His	Asn	Lys	Asn	Asn	Met	Leu	325	330	335
Pro	Thr	Pro	Pro	Arg	Phe	Ile	Arg	Gln	Ile	Thr	Cys	Val	His	Asn	Cys	340	345	350
Pro	Tyr	Gln	Ile	Gly	Pro	Arg	Ile	Tyr	Gln	Lys	Arg	Val	Cys	His	Arg	355	360	365
Pro	Arg	Arg	Pro	Arg	Cys	Lys	Trp	Cys	Asn	Thr	Thr	Glu	Ala	Val	Ala	370	375	380
Pro	Lys	Lys	Gln	Gln	Lys	Thr	Pro	Leu	Leu	Tyr	His	Phe	Arg	Pro	Cys	385	390	395
																		400

Thr Gln Pro Tyr Leu Val Pro Leu Pro Leu Leu Leu Ala Pro Asn His
 405 410 415
 Tyr Pro Pro Leu Leu Leu Lys Cys Leu Pro Leu His Pro Ser His Gly
 420 425 430
 Lys Asn Cys Leu Arg Phe Tyr Cys Cys Gln Leu Gly Ser Gly Gln Gly
 435 440 445
 Pro His Asp Pro Leu Leu Ala Leu Ile Gly Gly Lys Lys Asn Gln Leu
 450 455 460
 Ile Leu Ala Cys Leu Pro Pro Lys Val Gly Arg Arg Pro Ser Ser Leu
 465 470 475 480
 Tyr Gln Ile Glu Asp His Gly Gly Gly Leu Leu Ala Asn Gln Ser His
 485 490 495
 Asn Ala Gln Cys Tyr Ile Arg Leu His Pro Leu Pro Pro His Gln Leu
 500 505 510
 His Trp Lys Glu Lys Glu Leu Pro Leu Pro Pro Pro Pro Arg Ala
 515 520 525
 Leu Pro Pro Pro Pro Pro Asp Pro Trp Ser Pro Gln Pro Pro Pro Thr
 530 535 540
 Lys Lys Lys Pro Leu Ala Glu Lys Ser Val Asp Tyr Arg Phe Val Phe
 545 550 555 560
 Ser Thr Arg Gln Leu Tyr
 565

<210> 22

<211> 569

<212> PRT

<213> Type B PWD circovirus

<400> 22

Leu Ala Ser Arg Cys Arg Cys Cys Arg Pro Leu Val Glu Ala Ala Val
 1 5 10 15
 His Gly Ala Leu Leu Ile Ser Ser Ala Ser Gly Leu Gly Met Phe Pro
 20 25 30
 Pro His Glu Ser Gln Ile Ile Arg Gly Phe Val Leu Ala Leu Phe Tyr
 35 40 45

Pro	Ile	Lys	Trp	Tyr	Gly	Lys	Ile	Ile	Lys	Asn	Asn	Ala	Leu	Leu	Thr	
50						55				60						
Ile	Leu	Phe	Ser	Ser	Cys	Arg	Val	Glu	Leu	Pro	Glu	Ser	Ile	Lys	His	
65					70					75					80	
Leu	Leu	Leu	Ser	Lys	Ile	Phe	His	Leu	Pro	Ile	Gln	Thr	Gly	Ala	Ala	
				85					90					95		
Val	Asp	Leu	Phe	Arg	Phe	Ser	Cys	Ile	Leu	Leu	Ile	Phe	Phe	Val	Ala	
		100						105					110			
Thr	Phe	Phe	Ala	Val	Gln	His	Leu	Thr	Ser	Ser	Arg	Ser	Arg	Leu	Ser	
		115					120					125				
Leu	Pro	Thr	Val	Gln	Arg	Ser	Ser	His	Thr	Gly	Gln	Gln	Leu	Ala	Pro	
	130					135					140					
Thr	Gln	His	Gly	Asn	Cys	Leu	Leu	Val	Arg	Tyr	Arg	Lys	Asp	Ser	Ile	
145					150					155					160	
Glu	Ala	Pro	Gln	Ser	Phe	Lys	Gln	Phe	His	Ala	Pro	Phe	His	Leu	Leu	
				165					170					175		
Thr	Ile	Pro	Leu	Ser	Ile	Tyr	Val	Asp	Asn	His	Pro	Trp	Arg	Pro	Thr	
			180					185					190			
Thr	Phe	Ala	Phe	Pro	Ser	Ser	Ile	Lys	Cys	Val	Arg	Phe	Gly	Cys	Val	
		195					200					205				
Pro	Phe	Trp	Arg	Ser	Val	Leu	Pro	Pro	Ile	Thr	Val	Met	Thr	Phe	Phe	
	210					215					220					
His	Asn	Asn	Asn	Ile	Val	Lys	Ile	Ala	Pro	Gln	Gly	Pro	Ile	Ile	Gln	
225					230					235					240	
Ser	Gln	Thr	Ser	Ser	Ile	Trp	Gln	Ser	Tyr	Leu	Ser	Phe	Thr	Ser	Ser	
				245					250					255		
Tyr	Arg	Lys	Gln	Gly	Ala	Thr	Asn	Gln	Asn	Gly	Ala	Ile	Leu	Gly	Arg	
			260					265					270			
Gln	Phe	Pro	Val	Gly	Ser	Ser	Asp	Trp	Ser	Tyr	Phe	Ser	Lys	Ile	Pro	
		275					280					285				
Pro	Asn	Ser	Gly	Gln	Tyr	Lys	Pro	Leu	Ile	Ser	Cys	Phe	Leu	Gly	Arg	
	290					295					300					
Leu	Phe	Pro	Ala	Leu	Glu	Asp	Gly	Lys	Gly	Gly	Trp	Ala	Arg	Phe	Lys	
305					310					315					320	
Trp	Ile	Phe	Trp	Ile	Val	Ser	Asp	Lys	Lys	Asp	Ser	Arg	Leu	Pro	Lys	
				325					330					335		

Glu	Asn	Leu	Thr	Leu	His	Pro	Thr	Lys	Leu	Ile	Leu	Asn	Glu	Ser	Asn			
			340					345					350					
Tyr	Met	Cys	Pro	Val	Ser	Ile	Thr	Asn	Arg	Thr	Thr	Tyr	Val	Thr	Lys			
		355					360					365						
Ser	Arg	Leu	Ala	Ser	Ala	Thr	Thr	Met	Glu	Leu	Leu	Lys	Tyr	Asp	Gly			
		370				375					380							
Cys	Ser	Thr	Glu	Lys	Thr	Thr	Gln	Asn	Ser	Thr	Ile	Leu	Leu	Ser	Ile			
385					390					395					400			
Ser	Leu	Asn	Pro	Pro	Leu	Thr	Gly	Pro	Thr	Thr	Pro	Ser	Pro	Ser	Pro			
			405					410					415					
Pro	Ile	Ala	Pro	Pro	Thr	Thr	Met	Pro	Thr	Met	Pro	Ser	Pro	Gln	Pro			
		420					425						430					
Arg	Gln	Leu	Thr	Ile	Met	Phe	Leu	Leu	Val	Pro	Ala	Trp	Glu	Gly	Thr			
		435				440					445							
Val	Arg	Pro	Ser	Arg	Pro	Ala	Pro	Gly	Ser	Asn	Leu	Arg	Leu	Arg	Glu			
	450					455					460							
Glu	Thr	Thr	Asn	Leu	Pro	Cys	Leu	Ala	Pro	Thr	Gln	Gly	Gly	Glu	Gln			
465				470					475					480				
Pro	Phe	Phe	Thr	Met	Leu	Ile	Ser	Asp	Thr	Trp	Arg	Gly	Pro	Pro	Arg			
			485				490						495					
Glu	Ser	Gln	Pro	Glu	Ser	Ser	Leu	Ile	Asp	Ser	Pro	Ala	Pro	Ser	Ala			
		500					505					510						
Pro	Thr	Ser	Ser	Ala	Met	Lys	Gly	Glu	Gly	Ala	Thr	Val	Thr	Ala	Pro			
		515				520						525						
Thr	Ser	Ser	Gly	Pro	Ala	Ala	Ala	Ser	Ser	Arg	Ala	Leu	Ile	Ala	Ala			
	530				535					540								
Pro	Ala	Thr	Asp	Glu	Glu	Glu	Thr	Val	Gly	Gly	Gln	Ile	Arg	Ile	Gln			
545				550					555					560				
Phe	Arg	Phe	Phe	His	Ala	Thr	Leu	Ile										
			565															

<210> 23

<211> 945

<212> DNA

<213> Type B PWD circovirus

<220>

<221> CDS

<222> (1) .. (942)

<400> 23

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Met Pro Ser Lys Lys Asn Gly Arg Ser Gly Pro Gln Pro His Lys Arg	
1 5 10 15	
tgg gtg ttc act ctg aat aat cct tcc gaa gac gag cgc aag aaa ata	96
Trp Val Phe Thr Leu Asn Asn Pro Ser Glu Asp Glu Arg Lys Lys Ile	
20 25 30	
cgg gat ctt cca ata tcc cta ttt gat tat ttt att gtt ggc gag gag	144
Arg Asp Leu Pro Ile Ser Leu Phe Asp Tyr Phe Ile Val Gly Glu Glu	
35 40 45	
ggt aat gag gaa gga cga aca cct cac ctc cag ggg ttc gct aat ttt	192
Gly Asn Glu Glu Gly Arg Thr Pro His Leu Gln Gly Phe Ala Asn Phe	
50 55 60	
gtg aag aag cag act ttt aat aaa gtg aag tgg tat ttg ggt gcc cgc	240
Val Lys Lys Gln Thr Phe Asn Lys Val Lys Trp Tyr Leu Gly Ala Arg	
65 70 75 80	
tgc cac atc gag aaa gcg aaa gga aca gat cag cag aat aaa gaa tac	288
Cys His Ile Glu Lys Ala Lys Gly Thr Asp Gln Gln Asn Lys Glu Tyr	
85 90 95	
tgc agt aaa gaa ggc aac tta ctg atg gag tgt gga gct cct aga tct	336
Cys Ser Lys Glu Gly Asn Leu Leu Met Glu Cys Gly Ala Pro Arg Ser	
100 105 110	
cag gga caa cgg agt gac ctg tct act gct gtg agt acc ttg ttg gag	384
Gln Gly Gln Arg Ser Asp Leu Ser Thr Ala Val Ser Thr Leu Leu Glu	
115 120 125	
agc ggg agt ctg gtg acc gtt gca gag cag cac cct gta acg ttt gtc	432
Ser Gly Ser Leu Val Thr Val Ala Glu Gln His Pro Val Thr Phe Val	
130 135 140	
aga aat ttc cgc ggg ctg gct gaa ctt ttg aaa gtg agc ggg aaa atg	480
Arg Asn Phe Arg Gly Leu Ala Glu Leu Leu Lys Val Ser Gly Lys Met	
145 150 155 160	
cag aag cgt gat tgg aag act aat gta cac gtc att gtg ggg cca cct	528
Gln Lys Arg Asp Trp Lys Thr Asn Val His Val Ile Val Gly Pro Pro	
165 170 175	

ggg tgt ggt aaa agc aaa tgg gct gct aat ttt gca gac ccg gaa acc	576
Gly Cys Gly Lys Ser Lys Trp Ala Ala Asn Phe Ala Asp Pro Glu Thr	
180 185 190	
aca tac tgg aaa cca cct aga aac aag tgg tgg gat ggt tac cat ggt	624
Thr Tyr Trp Lys Pro Pro Arg Asn Lys Trp Trp Asp Gly Tyr His Gly	
195 200 205	
gaa gaa gtg gtt gtt att gat gac ttt tat ggc tgg ctg ccc tgg gat	672
Glu Glu Val Val Val Ile Asp Asp Phe Tyr Gly Trp Leu Pro Trp Asp	
210 215 220	
gat cta ctg aga ctg tgt gat cga tat cca ttg act gta gag act aaa	720
Asp Leu Leu Arg Leu Cys Asp Arg Tyr Pro Leu Thr Val Glu Thr Lys	
225 230 235 240	
ggt gga act gta cct ttt ttg gcc cgc agt att ctg att acc agc aat	768
Gly Gly Thr Val Pro Phe Leu Ala Arg Ser Ile Leu Ile Thr Ser Asn	
245 250 255	
cag acc ccg ttg gaa tgg tac tcc tca act gct gtc cca gct gta gaa	816
Gln Thr Pro Leu Glu Trp Tyr Ser Ser Thr Ala Val Pro Ala Val Glu	
260 265 270	
gct ctt tat cgg agg att act tcc ttg gta ttt tgg aag aat gct aca	864
Ala Leu Tyr Arg Arg Ile Thr Ser Leu Val Phe Trp Lys Asn Ala Thr	
275 280 285	
gaa caa tcc acg gag gaa ggg ggc cag ttc gtc acc ctt tcc ccc cca	912
Glu Gln Ser Thr Glu Glu Gly Gly Gln Phe Val Thr Leu Ser Pro Pro	
290 295 300	
tgc cct gaa ttt cca tat gaa ata aat tac tga	945
Cys Pro Glu Phe Pro Tyr Glu Ile Asn Tyr	
305 310	

<210> 24

<211> 314

<212> PRT

<213> Type B PWD circovirus

<400> 24

Met Pro Ser Lys Lys Asn Gly Arg Ser Gly Pro Gln Pro His Lys Arg
1 5 10 15

Trp Val Phe Thr Leu Asn Asn Pro Ser Glu Asp Glu Arg Lys Lys Ile
20 25 30

Arg Asp Leu Pro Ile Ser Leu Phe Asp Tyr Phe Ile Val Gly Glu Glu
35 40 45

Gly Asn Glu Glu Gly Arg Thr Pro His Leu Gln Gly Phe Ala Asn Phe
50 55 60

Val Lys Lys Gln Thr Phe Asn Lys Val Lys Trp Tyr Leu Gly Ala Arg
65 70 75 80

Cys His Ile Glu Lys Ala Lys Gly Thr Asp Gln Gln Asn Lys Glu Tyr
85 90 95

Cys Ser Lys Glu Gly Asn Leu Leu Met Glu Cys Gly Ala Pro Arg Ser
100 105 110

Gln Gly Gln Arg Ser Asp Leu Ser Thr Ala Val Ser Thr Leu Leu Glu
115 120 125

Ser Gly Ser Leu Val Thr Val Ala Glu Gln His Pro Val Thr Phe Val
130 135 140

Arg Asn Phe Arg Gly Leu Ala Glu Leu Leu Lys Val Ser Gly Lys Met
145 150 155 160

Gln Lys Arg Asp Trp Lys Thr Asn Val His Val Ile Val Gly Pro Pro
165 170 175

Gly Cys Gly Lys Ser Lys Trp Ala Ala Asn Phe Ala Asp Pro Glu Thr
180 185 190

Thr Tyr Trp Lys Pro Pro Arg Asn Lys Trp Trp Asp Gly Tyr His Gly
195 200 205

Glu Glu Val Val Val Ile Asp Asp Phe Tyr Gly Trp Leu Pro Trp Asp
210 215 220

Asp Leu Leu Arg Leu Cys Asp Arg Tyr Pro Leu Thr Val Glu Thr Lys
225 230 235 240

Gly Gly Thr Val Pro Phe Leu Ala Arg Ser Ile Leu Ile Thr Ser Asn
245 250 255

Gln Thr Pro Leu Glu Trp Tyr Ser Ser Thr Ala Val Pro Ala Val Glu
 260 265 270

Ala Leu Tyr Arg Arg Ile Thr Ser Leu Val Phe Trp Lys Asn Ala Thr
 275 280 285

Glu Gln Ser Thr Glu Glu Gly Gly Gln Phe Val Thr Leu Ser Pro Pro
 290 295 300

Cys Pro Glu Phe Pro Tyr Glu Ile Asn Tyr
 305 310

<210> 25

<211> 702

<212> DNA

<213> Type B PWD circovirus

<220>

<221> CDS

<222> (1) .. (699)

<400> 25

atg acg tat cca agg agg cgt tac cga aga aga aga cac cgc ccc cgc 48
 Met Thr Tyr Pro Arg Arg Arg Tyr Arg Arg Arg Arg His Arg Pro Arg
 1 5 10 15

agc cat ctt ggc cag atc ctc cgc cgc cgc ccc tgg ctc gtc cac ccc 96
 Ser His Leu Gly Gln Ile Leu Arg Arg Arg Pro Trp Leu Val His Pro
 20 25 30

cgc cac cgt tac cgc tgg aga agg aaa aat ggc atc ttc aac acc cgc 144
 Arg His Arg Tyr Arg Trp Arg Arg Lys Asn Gly Ile Phe Asn Thr Arg
 35 40 45

ctc tcc cgc acc ttc gga tat act gtc aag cga acc aca gtc aga acg 192
 Leu Ser Arg Thr Phe Gly Tyr Thr Val Lys Arg Thr Thr Val Arg Thr
 50 55 60

ccc tcc tgg gcg gtg gac atg atg aga ttc aat att aat gac ttt ctt 240
 Pro Ser Trp Ala Val Asp Met Met Arg Phe Asn Ile Asn Asp Phe Leu
 65 70 75 80

ccc cca gga ggg ggg tca aac ccc cgc tct gtg ccc ttt gaa tac tac	288
Pro Pro Gly Gly Gly Ser Asn Pro Arg Ser Val Pro Phe Glu Tyr Tyr	
85 90 95	
aga ata aga aag gtt aag gtt gaa ttc tgg ccc tgc tcc ccg atc acc	336
Arg Ile Arg Lys Val Lys Val Glu Phe Trp Pro Cys Ser Pro Ile Thr	
100 105 110	
cag ggt gac agg gga gtg ggc tcc agt gct gtt att tta gat gat aac	384
Gln Gly Asp Arg Gly Val Gly Ser Ser Ala Val Ile Leu Asp Asp Asn	
115 120 125	
ttt gta aca aag gcc aca gcc ctc acc tat gac ccc tat gta aac tac	432
Phe Val Thr Lys Ala Thr Ala Leu Thr Tyr Asp Pro Tyr Val Asn Tyr	
130 135 140	
tcc tcc cgc cat acc ata acc cag ccc ttc tcc tac cac tcc cgg tac	480
Ser Ser Arg His Thr Ile Thr Gln Pro Phe Ser Tyr His Ser Arg Tyr	
145 150 155 160	
ttt acc ccc aaa cct gtc cta gat ttc act att gat tac ttc caa cca	528
Phe Thr Pro Lys Pro Val Leu Asp Phe Thr Ile Asp Tyr Phe Gln Pro	
165 170 175	
aac aac aaa aga aac cag ctg tgg ctg aga cta caa act gct gga aat	576
Asn Asn Lys Arg Asn Gln Leu Trp Leu Arg Leu Gln Thr Ala Gly Asn	
180 185 190	
gta gac cac gta ggc ctc ggc act gcg ttc gaa aac agt ata tac gac	624
Val Asp His Val Gly Leu Gly Thr Ala Phe Glu Asn Ser Ile Tyr Asp	
195 200 205	
cag gaa tac aat atc cgt gta acc atg tat gta caa ttc aga gaa ttt	672
Gln Glu Tyr Asn Ile Arg Val Thr Met Tyr Val Gln Phe Arg Glu Phe	
210 215 220	
aat ttt aaa gac ccc cca ctt aac cct taa	702
Asn Phe Lys Asp Pro Pro Leu Asn Pro	
225 230	

<210> 26

<211> 233

<212> PRT

<213> Type B PWD circovirus

<400> 26

Met Thr Tyr Pro Arg Arg Arg Tyr Arg Arg Arg Arg His Arg Pro Arg
 1 5 10 15
 Ser His Leu Gly Gln Ile Leu Arg Arg Arg Pro Trp Leu Val His Pro
 20 25 30
 Arg His Arg Tyr Arg Trp Arg Arg Lys Asn Gly Ile Phe Asn Thr Arg
 35 40 45
 Leu Ser Arg Thr Phe Gly Tyr Thr Val Lys Arg Thr Thr Val Arg Thr
 50 55 60
 Pro Ser Trp Ala Val Asp Met Met Arg Phe Asn Ile Asn Asp Phe Leu
 65 70 75 80
 Pro Pro Gly Gly Gly Ser Asn Pro Arg Ser Val Pro Phe Glu Tyr Tyr
 85 90 95
 Arg Ile Arg Lys Val Lys Val Glu Phe Trp Pro Cys Ser Pro Ile Thr
 100 105 110
 Gln Gly Asp Arg Gly Val Gly Ser Ser Ala Val Ile Leu Asp Asp Asn
 115 120 125
 Phe Val Thr Lys Ala Thr Ala Leu Thr Tyr Asp Pro Tyr Val Asn Tyr
 130 135 140
 Ser Ser Arg His Thr Ile Thr Gln Pro Phe Ser Tyr His Ser Arg Tyr
 145 150 155 160
 Phe Thr Pro Lys Pro Val Leu Asp Phe Thr Ile Asp Tyr Phe Gln Pro
 165 170 175
 Asn Asn Lys Arg Asn Gln Leu Trp Leu Arg Leu Gln Thr Ala Gly Asn
 180 185 190
 Val Asp His Val Gly Leu Gly Thr Ala Phe Glu Asn Ser Ile Tyr Asp
 195 200 205
 Gln Glu Tyr Asn Ile Arg Val Thr Met Tyr Val Gln Phe Arg Glu Phe
 210 215 220

Asn Phe Lys Asp Pro Pro Leu Asn Pro
 225 230

<210> 27

<211> 315

<212> DNA

<213> Type B PWD circovirus

<220>

<221> CDS

<222> (1)..(312)

<400> 27

atg gta acc atc cca cca ctt gtt tct agg tgg ttt cca gta tgt ggt	48
Met Val Thr Ile Pro Pro Leu Val Ser Arg Trp Phe Pro Val Cys Gly	
1 5 10 15	

ttc cgg gtc tgc aaa att agc agc cca ttt gct ttt acc aca ccc agg	96
Phe Arg Val Cys Lys Ile Ser Ser Pro Phe Ala Phe Thr Thr Pro Arg	
20 25 30	

tgg ccc cac aat gac gtg tac att agt ctt cca atc acg ctt ctg cat	144
Trp Pro His Asn Asp Val Tyr Ile Ser Leu Pro Ile Thr Leu Leu His	
35 40 45	

ttt ccc gct cac ttt caa aag ttc agc cag ccc gcg gaa att tct gac	192
Phe Pro Ala His Phe Gln Lys Phe Ser Gln Pro Ala Glu Ile Ser Asp	
50 55 60	

aaa cgt tac agg gtg ctg ctc tgc aac ggt cac cag act ccc gct ctc	240
Lys Arg Tyr Arg Val Leu Leu Cys Asn Gly His Gln Thr Pro Ala Leu	
65 70 75 80	

caa caa ggt act cac agc agt aga cag gtc act ccg ttg tcc ctg aga	288
Gln Gln Gly Thr His Ser Ser Arg Gln Val Thr Pro Leu Ser Leu Arg	
85 90 95	

tct agg agc tcc aca ctc cat cag taa	315
Ser Arg Ser Ser Thr Leu His Gln	
100	

<210> 28

<211> 104

<212> PRT

<213> Type B PWD circovirus

<400> 28

Met Val Thr Ile Pro Pro Leu Val Ser Arg Trp Phe Pro Val Cys Gly
1 5 10 15

Phe Arg Val Cys Lys Ile Ser Ser Pro Phe Ala Phe Thr Thr Pro Arg
20 25 30

Trp Pro His Asn Asp Val Tyr Ile Ser Leu Pro Ile Thr Leu Leu His
35 40 45

Phe Pro Ala His Phe Gln Lys Phe Ser Gln Pro Ala Glu Ile Ser Asp
50 55 60

Lys Arg Tyr Arg Val Leu Leu Cys Asn Gly His Gln Thr Pro Ala Leu
65 70 75 80

Gln Gln Gly Thr His Ser Ser Arg Gln Val Thr Pro Leu Ser Leu Arg
85 90 95

Ser Arg Ser Ser Thr Leu His Gln
100

<210> 29

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 29

Val Asp Met Met Arg Phe Asn Ile Asn Asp Phe Leu Pro Pro Gly
1 5 10 15

<210> 30

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 30

Gln	Gly	Asp	Arg	Gly	Val	Gly	Ser	Ser	Ala	Val	Ile	Leu	Asp	Asp
1				5					10				15	

<210> 31

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 31

Gly	Val	Gly	Ser	Ser	Ala	Val	Ile	Leu	Asp	Asp	Asn	Phe	Val	Thr
1				5					10				15	

<210> 32

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 32

Val	Asp	His	Val	Gly	Leu	Gly	Thr	Ala	Phe	Glu	Asn	Ser	Ile	Tyr
1				5					10				15	

<210> 33

<211> 8

<212> DNA

<213> Type A PWD circovirus

<400> 33

tgtggcga

<210> 34
<211> 8
<212> DNA
<213> Type A PWD circovirus

<400> 34
agtttcct 8

<210> 35
<211> 20
<212> DNA
<213> Type A PWD circovirus

<400> 35
tcatttagag ggtctttcag 20

<210> 36
<211> 8
<212> DNA
<213> Type A PWD circovirus

<400> 36
gtcaacct 8

<210> 37
<211> 8
<212> DNA
<213> Type A PWD circovirus

<400> 37
gtggttgc 8

<210> 38

<211> 8

<212> DNA

<213> Type A PWD circovirus

<400> 38

agcccagg

8

<210> 39

<211> 8

<212> DNA

<213> Type A PWD circovirus

<400> 39

ttggctgg

8

<210> 40

<211> 12

<212> DNA

<213> Type A PWD circovirus

<400> 40

tctagctctg gt

12

<210> 41

<211> 12

<212> DNA

<213> Type A PWD circovirus

<400> 41

atctcagctc gt

12

<210> 42

<211> 12

<212> DNA

<213> Type A PWD circovirus

<400> 42

tgtcctcctc tt

12

<210> 43

<211> 8

<212> DNA

<213> Type A PWD circovirus

<400> 43

tctctaga

8

<210> 44

<211> 8

<212> DNA

<213> Type A PWD circovirus

<400> 44

tgtaccaa

8

<210> 45

<211> 8

<212> DNA

<213> Type A PWD circovirus

<400> 45

tccgtctt

8

<210> 46

<211> 20

<212> DNA

<213> Primer

<400> 46

gtgtgctcga cattggtgtg

20

<210> 47

<211> 20

<212> DNA

<213> Primer

<400> 47

tggaatgtta acgagctgag

20

<210> 48

<211> 20

<212> DNA

<213> Primer

<400> 48

ctcgcagcca tcttggaatg

20

<210> 49

<211> 20

<212> DNA

<213> Primer

<400> 49

cgcgcgtaat acgactcact

20

<210> 50

<211> 26

<212> DNA

<213> Primer

<400> 50

cctgtctact gctgtgagta ccttgt

26

<210> 51

<211> 26

<212> DNA

<213> Primer

<400> 51

gcagtagaca ggtcactccg ttgtcc

26

<210> 52

<211> 20

<212> DNA

<213> Primer

<400> 52

tggaatgtta actacctcaa

20

<210> 53

<211> 23

<212> DNA

<213> Primer

<400> 53

ggcggcgcca tctgtaacgg ttt

23

<210> 54

<211> 23

<212> DNA

<213> Primer

<400> 54

gatggcgccg aaagacgggt atc

23

<210> 55

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 55

Asn	Val	Asn	Glu	Leu	Arg	Phe	Asn	Ile	Gly	Gln	Phe	Leu	Pro	Pro
1				5					10				15	

<210> 56

<211> 14

<212> PRT

<213> Type A PWD circovirus

<400> 56

Thr	Ser	Asn	Gln	Arg	Gly	Val	Gly	Ser	Thr	Val	Val	Ile	Leu
1				5					10				

<210> 57

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 57

Arg	Gly	Val	Gly	Ser	Thr	Val	Val	Ile	Leu	Asp	Ala	Asn	Phe	Val
1				5					10					15

<210> 58

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 58

Phe	Thr	Ile	Asp	Tyr	Phe	Gln	Pro	Asn	Asn	Lys	Arg	Asn	Gln	Leu
1				5					10					15

<210> 59

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 59

Asp	Gln	Thr	Ile	Asp	Trp	Phe	Gln	Pro	Asn	Asn	Lys	Arg	Asn	Gln
1				5					10					15

<210> 60

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 60

Asn	Val	Glu	His	Thr	Gly	Leu	Gly	Tyr	Ala	Leu	Gln	Asn	Ala	Thr
1				5					10					15

<210> 61

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 61

His	Arg	Pro	Arg	Ser	His	Leu	Gly	Gln	Ile	Leu	Arg	Arg	Arg	Pro
1				5					10					15

<210> 62

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 62

Ser	His	Leu	Gly	Gln	Ile	Leu	Arg	Arg	Arg	Pro	Trp	Leu	Val	His
1				5					10					15

<210> 63

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 63

Gln	Ile	Leu	Arg	Arg	Arg	Pro	Trp	Leu	Val	His	Pro	Arg	His	Arg
1				5					10					15

<210> 64

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 64

Arg	Arg	Pro	Trp	Leu	Val	His	Pro	Arg	His	Arg	Tyr	Arg	Trp	Arg
1				5					10					15

<210> 65

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 65

Leu	Val	His	Pro	Arg	His	Arg	Tyr	Arg	Trp	Arg	Arg	Lys	Asn	Gly
1				5					10					15

<210> 66

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 66

Arg	His	Arg	Tyr	Arg	Trp	Arg	Arg	Lys	Asn	Gly	Ile	Phe	Asn	Thr
1				5					10					15

<210> 67

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 67

Arg	Trp	Arg	Arg	Lys	Asn	Gly	Ile	Phe	Asn	Thr	Arg	Leu	Ser	Arg
1				5					10					15

<210> 68

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 68

Lys	Asn	Gly	Ile	Phe	Asn	Thr	Arg	Leu	Ser	Arg	Thr	Phe	Gly	Tyr
1				5					10					15

<210> 69

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 69

Phe	Asn	Thr	Arg	Leu	Ser	Arg	Thr	Phe	Gly	Tyr	Thr	Val	Lys	Arg
1				5					10					15

<210> 70

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 70

Leu	Ser	Arg	Thr	Phe	Gly	Tyr	Thr	Val	Lys	Arg	Thr	Thr	Val	Arg
1				5					10					15

<210> 71

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 71

Phe	Gly	Tyr	Thr	Val	Lys	Arg	Thr	Thr	Val	Arg	Thr	Pro	Ser	Trp
1				5					10					15

<210> 72

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 72

Val	Lys	Arg	Thr	Thr	Val	Arg	Thr	Pro	Ser	Trp	Ala	Val	Asp	Met
1				5					10					15

<210> 73

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 73

Thr	Val	Arg	Thr	Pro	Ser	Trp	Ala	Val	Asp	Met	Met	Arg	Phe	Asn
1				5					10					15

<210> 74

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 74

Pro	Ser	Trp	Ala	Val	Asp	Met	Met	Arg	Phe	Asn	Ile	Asn	Asp	Phe
1				5					10					15

<210> 75

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 75

Arg	Phe	Asn	Ile	Asn	Asp	Phe	Leu	Pro	Pro	Gly	Gly	Gly	Ser	Asn
1				5					10					15

<210> 76

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 76

Asn	Asp	Phe	Leu	Pro	Pro	Gly	Gly	Gly	Ser	Asn	Pro	Arg	Ser	Val
1				5					10					15

<210> 77

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 77

Pro	Pro	Gly	Gly	Gly	Ser	Asn	Pro	Arg	Ser	Val	Pro	Phe	Glu	Tyr
1				5					10					15

<210> 78

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 78

Gly	Ser	Asn	Pro	Arg	Ser	Val	Pro	Phe	Glu	Tyr	Tyr	Arg	Ile	Arg
1				5					10					15

<210> 79

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 79

Arg	Ser	Val	Pro	Phe	Glu	Tyr	Tyr	Arg	Ile	Arg	Lys	Val	Lys	Val
1				5					10					15

<210> 80

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 80

Phe	Glu	Tyr	Tyr	Arg	Ile	Arg	Lys	Val	Lys	Val	Glu	Phe	Trp	Pro
1				5					10					15

<210> 81

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 81

Arg	Ile	Arg	Lys	Val	Lys	Val	Glu	Phe	Trp	Pro	Cys	Ser	Pro	Ile
1				5					10					15

<210> 82

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 82

Val	Lys	Val	Glu	Phe	Trp	Pro	Cys	Ser	Pro	Ile	Thr	Gln	Gly	Asp
1				5					10					15

<210> 83

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 83

Phe	Trp	Pro	Cys	Ser	Pro	Ile	Thr	Gln	Gly	Asp	Arg	Gly	Val	Gly
1				5					10					15

<210> 84

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 84

Thr	Arg	Pro	Arg	Ser	His	Leu	Gly	Asn	Ile	Leu	Arg	Arg	Arg	Pro
1				5					10					15

<210> 85

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 85

Ser	His	Leu	Gly	Asn	Ile	Leu	Arg	Arg	Arg	Pro	Tyr	Leu	Val	His
1				5					10					15

<210> 86

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 86

Asn	Ile	Leu	Arg	Arg	Arg	Pro	Tyr	Leu	Val	His	Pro	Ala	Phe	Arg
1				5					10					15

<210> 87

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 87

Arg	Arg	Pro	Tyr	Leu	Val	His	Pro	Ala	Phe	Arg	Asn	Arg	Tyr	Arg
1				5					10					15

<210> 88

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 88

Leu	Val	His	Pro	Ala	Phe	Arg	Asn	Arg	Tyr	Arg	Trp	Arg	Arg	Lys
1				5					10					15

<210> 89

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 89

Ala	Phe	Arg	Asn	Arg	Tyr	Arg	Trp	Arg	Arg	Lys	Thr	Gly	Ile	Phe
1				5					10					15

<210> 90

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 90

Arg	Tyr	Arg	Trp	Arg	Arg	Lys	Thr	Gly	Ile	Phe	Asn	Ser	Arg	Leu
1				5					10					15

<210> 91

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 91

Arg	Arg	Lys	Thr	Gly	Ile	Phe	Asn	Ser	Arg	Leu	Ser	Arg	Glu	Phe
1				5					10					15

<210> 92

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 92

Gly	Ile	Phe	Asn	Ser	Arg	Leu	Ser	Arg	Glu	Phe	Val	Leu	Thr	Ile
1				5					10					15

<210> 93

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 93

Ser	Arg	Leu	Ser	Arg	Glu	Phe	Val	Leu	Thr	Ile	Arg	Gly	Gly	His
1				5					10					15

<210> 94

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 94

Arg	Glu	Phe	Val	Leu	Thr	Ile	Arg	Gly	Gly	His	Ser	Gln	Pro	Ser
1				5					10					15

<210> 95

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 95

Leu	Thr	Ile	Arg	Gly	Gly	His	Ser	Gln	Pro	Ser	Trp	Asn	Val	Asn
1				5					10					15

<210> 96

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 96

Gly	Gly	His	Ser	Gln	Pro	Ser	Trp	Asn	Val	Asn	Glu	Leu	Arg	Phe
1				5					10					15

<210> 97

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 97

Gln	Pro	Ser	Trp	Asn	Val	Asn	Glu	Leu	Arg	Phe	Asn	Ile	Gly	Gln
1				5					10					15

<210> 98

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 98

Asn	Val	Asn	Glu	Leu	Arg	Phe	Asn	Ile	Gly	Gln	Phe	Leu	Pro	Pro
1				5					10					15

<210> 99

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 99

Leu	Arg	Phe	Asn	Ile	Gly	Gln	Phe	Leu	Pro	Pro	Ser	Gly	Gly	Thr
1				5					10					15

<210> 100

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 100

Ile	Gly	Gln	Phe	Leu	Pro	Pro	Ser	Gly	Gly	Thr	Asn	Pro	Leu	Pro
1				5					10					15

<210> 101

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 101

Leu	Pro	Pro	Ser	Gly	Gly	Thr	Asn	Pro	Leu	Pro	Leu	Pro	Phe	Gln
1				5					10					15

<210> 102

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 102

Gly	Gly	Thr	Asn	Pro	Leu	Pro	Leu	Pro	Phe	Gln	Tyr	Tyr	Arg	Ile
1				5					10					15

<210> 103

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 103

Pro	Leu	Pro	Leu	Pro	Phe	Gln	Tyr	Tyr	Arg	Ile	Arg	Lys	Ala	Lys
1				5					10					15

<210> 104

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 104

Pro	Phe	Gln	Tyr	Tyr	Arg	Ile	Arg	Lys	Ala	Lys	Tyr	Glu	Phe	Tyr
1				5					10					15

<210> 105

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 105

Tyr	Arg	Ile	Arg	Lys	Ala	Lys	Tyr	Glu	Phe	Tyr	Pro	Arg	Asp	Pro
1				5					10					15

<210> 106

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 106

Lys	Ala	Lys	Tyr	Glu	Phe	Tyr	Pro	Arg	Asp	Pro	Ile	Thr	Ser	Asn
1				5					10					15

<210> 107

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 107

Glu	Phe	Tyr	Pro	Arg	Asp	Pro	Ile	Thr	Ser	Asn	Gln	Arg	Gly	Val
1				5					10					15

<210> 108

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 108

Arg	Asp	Pro	Ile	Thr	Ser	Asn	Gln	Arg	Gly	Val	Gly	Ser	Thr	Val
1				5					10					15

<210> 109

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 109

Thr	Ser	Asn	Gln	Arg	Gly	Val	Gly	Ser	Thr	Val	Val	Ile	Leu	Asp
1				5					10					15

<210> 110

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 110

Gly	Val	Gly	Ser	Ser	Ala	Val	Ile	Leu	Asp	Asp	Asn	Phe	Val	Thr
1				5					10					15

<210> 111

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 111

Ser	Ala	Val	Ile	Leu	Asp	Asp	Asn	Phe	Val	Thr	Lys	Ala	Thr	Ala
1				5					10					15

<210> 112

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 112

Leu	Asp	Asp	Asn	Phe	Val	Thr	Lys	Ala	Thr	Ala	Leu	Thr	Tyr	Asp
1				5					10					15

<210> 113

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 113

Phe	Val	Thr	Lys	Ala	Thr	Ala	Leu	Thr	Tyr	Asp	Pro	Tyr	Val	Asn
1				5					10					15

<210> 114

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 114

Ala	Thr	Ala	Leu	Thr	Tyr	Asp	Pro	Tyr	Val	Asn	Tyr	Ser	Ser	Arg
1				5					10					15

<210> 115

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 115

Thr	Tyr	Asp	Pro	Tyr	Val	Asn	Tyr	Ser	Ser	Arg	His	Thr	Ile	Thr
1				5					10					15

<210> 116

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 116

Tyr	Val	Asn	Tyr	Ser	Ser	Arg	His	Thr	Ile	Thr	Gln	Pro	Phe	Ser
1				5					10					15

<210> 117

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 117

Ser	Ser	Arg	His	Thr	Ile	Thr	Gln	Pro	Phe	Ser	Tyr	His	Ser	Arg
1				5					10					15

<210> 118

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 118

Thr	Ile	Thr	Gln	Pro	Phe	Ser	Tyr	His	Ser	Arg	Tyr	Phe	Thr	Pro
1				5					10					15

<210> 119

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 119

Pro	Phe	Ser	Tyr	His	Ser	Arg	Tyr	Phe	Thr	Pro	Lys	Pro	Val	Leu
1				5					10					15

<210> 120

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 120

His	Ser	Arg	Tyr	Phe	Thr	Pro	Lys	Pro	Val	Leu	Asp	Phe	Thr	Ile
1				5					10					15

<210> 121

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 121

Phe	Thr	Pro	Lys	Pro	Val	Leu	Asp	Phe	Thr	Ile	Asp	Tyr	Phe	Gln
1				5					10					15

<210> 122

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 122

Pro	Val	Leu	Asp	Phe	Thr	Ile	Asp	Tyr	Phe	Gln	Pro	Asn	Asn	Lys
1				5					10					15

<210> 123

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 123

Phe	Thr	Ile	Asp	Tyr	Phe	Gln	Pro	Asn	Asn	Lys	Arg	Asn	Gln	Leu
1				5					10					15

<210> 124

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 124

Tyr	Phe	Gln	Pro	Asn	Asn	Lys	Arg	Asn	Gln	Leu	Trp	Leu	Arg	Leu
1				5					10					15

<210> 125

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 125

Asn	Asn	Lys	Arg	Asn	Gln	Leu	Trp	Leu	Arg	Leu	Gln	Thr	Ala	Gly
1				5					10					15

<210> 126

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 126

Asn	Gln	Leu	Trp	Leu	Arg	Leu	Gln	Thr	Ala	Gly	Asn	Val	Asp	His
1				5					10					15

<210> 127

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 127

Leu	Arg	Leu	Gln	Thr	Ala	Gly	Asn	Val	Asp	His	Val	Gly	Leu	Gly
1				5					10					15

<210> 128

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 128

Thr	Ala	Gly	Asn	Val	Asp	His	Val	Gly	Leu	Gly	Thr	Ala	Phe	Glu
1				5					10					15

<210> 129

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 129

Gly	Leu	Gly	Thr	Ala	Phe	Glu	Asn	Ser	Ile	Tyr	Asp	Gln	Glu	Tyr
1				5					10					15

<210> 130

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 130

Ala	Phe	Glu	Asn	Ser	Ile	Tyr	Asp	Gln	Glu	Tyr	Asn	Ile	Arg	Val
1				5					10					15

<210> 131

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 131

Ser	Ile	Tyr	Asp	Gln	Glu	Tyr	Asn	Ile	Arg	Val	Thr	Met	Tyr	Val
1				5					10					15

<210> 132

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 132

Gln	Glu	Tyr	Asn	Ile	Arg	Val	Thr	Met	Tyr	Val	Gln	Phe	Arg	Glu
1				5					10					15

<210> 133

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 133

Ile	Arg	Val	Thr	Met	Tyr	Val	Gln	Phe	Arg	Glu	Phe	Asn	Phe	Lys
1				5					10					15

<210> 134

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 134

Met	Tyr	Val	Gln	Phe	Arg	Glu	Phe	Asn	Phe	Lys	Asp	Pro	Pro	Leu
1				5					10					15

<210> 135

<211> 15

<212> PRT

<213> Type B PWD circovirus

<400> 135

Val	Gln	Phe	Arg	Glu	Phe	Asn	Phe	Lys	Asp	Pro	Pro	Leu	Asn	Pro
1				5					10					15

<210> 136

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 136

Arg	Gly	Val	Gly	Ser	Thr	Val	Val	Ile	Leu	Asp	Ala	Asn	Phe	Val
1				5					10					15

<210> 137

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 137

Ser	Thr	Val	Val	Ile	Leu	Asp	Ala	Asn	Phe	Val	Thr	Pro	Ser	Thr
1				5					10					15

<210> 138

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 138

Ile	Leu	Asp	Ala	Asn	Phe	Val	Thr	Pro	Ser	Thr	Asn	Leu	Ala	Tyr
1				5					10					15

<210> 139

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 139

Asn	Phe	Val	Thr	Pro	Ser	Thr	Asn	Leu	Ala	Tyr	Asp	Pro	Tyr	Ile
1				5					10					15

<210> 140

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 140

Pro	Ser	Thr	Asn	Leu	Ala	Tyr	Asp	Pro	Tyr	Ile	Asn	Tyr	Ser	Ser
1				5					10					15

<210> 141

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 141

Leu	Ala	Tyr	Asp	Pro	Tyr	Ile	Asn	Tyr	Ser	Ser	Arg	His	Thr	Ile
1				5					10					15

<210> 142

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 142

Pro	Tyr	Ile	Asn	Tyr	Ser	Ser	Arg	His	Thr	Ile	Arg	Gln	Pro	Phe
1				5					10					15

<210> 143

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 143

Tyr	Ser	Ser	Arg	His	Thr	Ile	Arg	Gln	Pro	Phe	Thr	Tyr	His	Ser
1				5					10					15

<210> 144

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 144

His	Thr	Ile	Arg	Gln	Pro	Phe	Thr	Tyr	His	Ser	Arg	Tyr	Phe	Thr
1				5					10					15

<210> 145

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 145

Gln	Pro	Phe	Thr	Tyr	His	Ser	Arg	Tyr	Phe	Thr	Pro	Lys	Pro	Glu
1				5					10					15

<210> 146

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 146

Tyr	His	Ser	Arg	Tyr	Phe	Thr	Pro	Lys	Pro	Glu	Leu	Asp	Gln	Thr
1				5					10					15

<210> 147

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 147

Tyr	Phe	Thr	Pro	Lys	Pro	Glu	Leu	Asp	Gln	Thr	Ile	Asp	Trp	Phe
1				5					10					15

<210> 148

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 148

Lys	Pro	Glu	Leu	Asp	Gln	Thr	Ile	Asp	Trp	Phe	Gln	Pro	Asn	Asn
1				5					10					15

<210> 149

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 149

Asp	Gln	Thr	Ile	Asp	Trp	Phe	Gln	Pro	Asn	Asn	Lys	Arg	Asn	Gln
1				5					10					15

<210> 150

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 150

Asp	Trp	Phe	Gln	Pro	Asn	Asn	Lys	Arg	Asn	Gln	Leu	Trp	Leu	His
1				5					10					15

<210> 151

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 151

Pro	Asn	Asn	Lys	Arg	Asn	Gln	Leu	Trp	Leu	His	Leu	Asn	Thr	His
1				5					10					15

<210> 152

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 152

Arg	Asn	Gln	Leu	Trp	Leu	His	Leu	Asn	Thr	His	Thr	Asn	Val	Glu
1				5					10					15

<210> 153

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 153

Trp	Leu	His	Leu	Asn	Thr	His	Thr	Asn	Val	Glu	His	Thr	Gly	Leu
1				5					10					15

<210> 154

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 154

Asn	Thr	His	Thr	Asn	Val	Glu	His	Thr	Gly	Leu	Gly	Tyr	Ala	Leu
1				5					10					15

<210> 155

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 155

Asn	Val	Glu	His	Thr	Gly	Leu	Gly	Tyr	Ala	Leu	Gln	Asn	Ala	Thr
1				5					10					15

<210> 156

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 156

Thr	Gly	Leu	Gly	Tyr	Ala	Leu	Gln	Asn	Ala	Thr	Thr	Ala	Gln	Asn
1				5					10					15

<210> 157

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 157

Tyr	Ala	Leu	Gln	Asn	Ala	Thr	Thr	Ala	Gln	Asn	Tyr	Val	Val	Arg
1				5					10					15

<210> 158

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 158

Asn	Ala	Thr	Thr	Ala	Gln	Asn	Tyr	Val	Val	Arg	Leu	Thr	Ile	Tyr
1				5					10					15

<210> 159

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 159

Ala	Gln	Asn	Tyr	Val	Val	Arg	Leu	Thr	Ile	Tyr	Val	Gln	Phe	Arg
1				5					10					15

<210> 160

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 160

Val	Val	Arg	Leu	Thr	Ile	Tyr	Val	Gln	Phe	Arg	Glu	Phe	Ile	Leu
1				5				10						15

<210> 161

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 161

Thr	Ile	Tyr	Val	Gln	Phe	Arg	Glu	Phe	Ile	Leu	Lys	Asp	Pro	Leu
1				5				10						15

<210> 162

<211> 15

<212> PRT

<213> Type A PWD circovirus

<400> 162

Tyr	Val	Gln	Phe	Arg	Glu	Phe	Ile	Leu	Lys	Asp	Pro	Leu	Asn	Glu
1				5				10						15

<210> 163

<211> 1759

<212> DNA

<213> Type A PWD circovirus

<400> 163

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<210> 164

<211> 1759

<212> DNA

<213> Type A PWD circovirus

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<210> 165

<211> 312

<212> PRT

<213> Type A PWD circovirus

<400> 165

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          50          55          60
Gln Thr Phe Asn Lys Val Lys Trp Tyr Phe Gly Ala Arg Cys His Ile
65          70          75          80
Gly Lys Ala Lys Gly Thr Asp Gln Gln Asn Lys Gly Tyr Cys Ser Lys
          85          90          95
Gly Gly His Ile Leu Ile Gly Cys Gly Ala Pro Arg Asn Gln Gly Lys
          100          105          110
Arg Ser Asp Leu Ser Thr Ala Val Ser Thr Leu Leu Gly Thr Gly Ser
          115          120          125

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Leu Val Thr Val Ala Gly Gln Phe Pro Val Thr Tyr Val Arg Asn Phe
 130 135 140

Arg Gly Leu Ala Gly Leu Leu Lys Val Ser Gly Lys Met Gln Gln Arg
 145 150 155 160

Asp Trp Lys Thr Ala Val His Val Ile Val Gly Pro Pro Gly Cys Gly
 165 170 175

Lys Ser Gln Trp Ala Arg Asn Phe Ala Gly Pro Arg Asp Thr Tyr Trp
 180 185 190

Lys Pro Ser Arg Asn Lys Trp Trp Asp Gly Tyr His Gly Gly Gly Val
 195 200 205

Val Val Leu Asp Asp Phe Tyr Gly Trp Leu Pro Trp Asp Asp Leu Leu
 210 215 220

Arg Leu Cys Asp Arg Tyr Pro Leu Thr Val Gly Thr Lys Gly Gly Thr
 225 230 235 240

Val Pro Phe Leu Ala Arg Ser Ile Leu Ile Thr Ser Asn Gln Ala Pro
 245 250 255

Gln Gly Trp Tyr Ser Ser Thr Ala Val Pro Ala Val Gly Ala Leu Tyr
 260 265 270

Arg Arg Ile Thr Thr Leu Gln Phe Trp Lys Thr Ala Gly Gly Gln Ser
 275 280 285

Thr Gly Val Pro Gly Gly Arg Phe Gly Ala Val Asp Pro Pro Cys Ala
 290 295 300

Leu Phe Pro Tyr Lys Ile Asn Tyr
 305 310

<210> 166

<211> 312

<212> PRT

<213> Type A PWD circovirus

<400> 166

Met Pro Ser Lys Lys Ser Gly Pro Gln Pro His Lys Arg Trp Val Phe
 1 5 10 15

Thr Leu Asn Asn Pro Ser Gly Gly Gly Lys Asn Lys Ile Arg Gly Leu
 20 25 30

Pro Ile Ser Leu Phe Asp Tyr Phe Val Cys Gly Gly Gly Gly Leu Gly
 35 40 45
 Gly Gly Arg Thr Ala His Leu Gln Gly Phe Ala Asn Phe Ala Lys Lys
 50 55 60
 Gln Thr Phe Asn Lys Val Lys Trp Tyr Phe Gly Ala Arg Cys His Ile
 65 70 75 80
 Gly Lys Ala Lys Gly Thr Asp Gln Gln Asn Lys Gly Tyr Cys Ser Lys
 85 90 95
 Gly Gly His Ile Leu Ile Gly Cys Gly Ala Pro Arg Asn Gln Gly Lys
 100 105 110
 Arg Ser Asp Leu Ser Thr Ala Val Ser Thr Leu Leu Gly Thr Gly Ser
 115 120 125
 Leu Val Thr Val Ala Gly Gln Phe Pro Val Thr Tyr Val Arg Asn Phe
 130 135 140
 Arg Gly Leu Ala Gly Leu Leu Lys Val Ser Gly Lys Met Gln Gln Arg
 145 150 155 160
 Asp Trp Lys Thr Ala Val His Val Ile Val Gly Pro Pro Gly Cys Gly
 165 170 175
 Lys Ser Gln Trp Ala Arg Asn Phe Ala Gly Pro Ser Asp Thr Tyr Trp
 180 185 190
 Lys Pro Ser Arg Asn Lys Trp Trp Asp Gly Tyr His Gly Gly Gly Val
 195 200 205
 Val Val Leu Asp Asp Phe Tyr Gly Trp Leu Pro Trp Asp Asp Leu Leu
 210 215 220
 Arg Leu Cys Asp Arg Tyr Pro Leu Thr Val Gly Thr Lys Gly Gly Thr
 225 230 235 240
 Val Pro Phe Leu Ala Arg Ser Ile Leu Ile Thr Ser Asn Gln Ala Pro
 245 250 255
 Gln Gly Trp Tyr Ser Ser Thr Ala Val Pro Ala Val Gly Ala Leu Tyr
 260 265 270
 Arg Arg Ile Thr Thr Leu Gln Phe Trp Lys Thr Ala Gly Gly Gln Ser
 275 280 285
 Thr Gly Val Pro Gly Gly Arg Phe Gly Ala Val Asp Pro Pro Cys Ala
 290 295 300
 Leu Phe Pro Tyr Lys Ile Asn Tyr
 305 310

<210> 167

<211> 233

<212> PRT

<213> Type A PWD circovirus

<400> 167

Met	Thr	Trp	Pro	Arg	Arg	Arg	Tyr	Arg	Arg	Arg	Arg	Thr	Arg	Pro	Arg	
1				5					10					15		
Ser	His	Leu	Gly	Asn	Ile	Leu	Arg	Arg	Arg	Pro	Tyr	Leu	Ala	His	Pro	
			20					25					30			
Ala	Phe	Arg	Asn	Arg	Tyr	Arg	Trp	Arg	Arg	Lys	Thr	Gly	Ile	Phe	Asn	
		35					40					45				
Ser	Arg	Leu	Ser	Thr	Glu	Phe	Val	Leu	Thr	Ile	Arg	Gly	Gly	His	Ser	
	50					55					60					
Gln	Pro	Ser	Trp	Asn	Val	Asn	Tyr	Leu	Lys	Phe	Asn	Ile	Gly	Gln	Phe	
65					70					75					80	
Leu	Pro	Pro	Ser	Gly	Gly	Thr	Asn	Pro	Leu	Pro	Leu	Pro	Phe	Gln	Tyr	
				85					90					95		
Tyr	Arg	Ile	Arg	Lys	Ala	Lys	Tyr	Glu	Phe	Tyr	Pro	Arg	Asp	Pro	Ile	
			100					105					110			
Thr	Ser	Asn	Gln	Arg	Gly	Val	Gly	Ser	Thr	Val	Val	Ile	Leu	Asp	Ala	
		115					120					125				
Asn	Phe	Val	Thr	Pro	Ser	Thr	Asn	Leu	Ala	Tyr	Asp	Pro	Tyr	Ile	Asn	
	130					135					140					
Tyr	Ser	Ser	Arg	His	Thr	Ile	Arg	Gln	Pro	Phe	Thr	Tyr	His	Ser	Arg	
145					150					155					160	
Tyr	Phe	Thr	Pro	Lys	Pro	Glu	Leu	Asp	Gln	Thr	Ile	Asp	Trp	Phe	His	
				165					170					175		
Pro	Asn	Asn	Lys	Arg	Asn	Gln	Leu	Trp	Leu	His	Leu	Asn	Thr	His	Thr	
			180					185					190			
Asn	Val	Glu	His	Thr	Gly	Leu	Gly	Tyr	Ala	Leu	Gln	Asn	Ala	Ala	Thr	
		195					200					205				
Ala	Gln	Asn	Tyr	Val	Val	Arg	Leu	Thr	Ile	Tyr	Val	Gln	Phe	Arg	Glu	
	210					215					220					
Phe	Ile	Leu	Lys	Asp	Pro	Leu	Asn	Lys								
225					230											

<210> 168

<211> 233

<212> PRT

<213> Type A PWD circovirus

<400> 168

Met	Thr	Trp	Pro	Arg	Arg	Arg	Tyr	Arg	Arg	Arg	Arg	Thr	Arg	Pro	Arg
1				5				10						15	
Ser	His	Leu	Gly	Asn	Ile	Leu	Arg	Arg	Arg	Pro	Tyr	Leu	Val	His	Pro
			20				25						30		
Ala	Phe	Arg	Asn	Arg	Tyr	Arg	Trp	Arg	Arg	Lys	Thr	Gly	Ile	Phe	Asn
		35					40					45			
Cys	Arg	Leu	Ser	Lys	Glu	Phe	Val	Ile	Thr	Ile	Arg	Gly	Gly	His	Ser
	50					55					60				
Gln	Pro	Ser	Trp	Ile	Val	Asn	Ile	Leu	Arg	Phe	Asn	Ile	Gly	Gln	Phe
65					70					75					80
Leu	Pro	Pro	Ser	Gly	Gly	Thr	Asn	Pro	Leu	Pro	Leu	Pro	Phe	Gln	Tyr
				85					90					95	
Tyr	Arg	Ile	Arg	Lys	Ala	Lys	Tyr	Glu	Phe	Tyr	Pro	Arg	Asp	Pro	Ile
			100					105					110		
Thr	Ser	Asn	Glu	Arg	Gly	Val	Gly	Ser	Thr	Val	Val	Ile	Leu	Asp	Ala
		115					120					125			
Asn	Phe	Val	Thr	Pro	Ser	Thr	Asn	Leu	Ala	Tyr	Asp	Pro	Tyr	Ile	Asn
	130					135					140				
Tyr	Ser	Ser	Arg	His	Thr	Ile	Arg	Gln	Pro	Phe	Thr	Tyr	His	Ser	Arg
145				150						155					160
Tyr	Phe	Thr	Pro	Lys	Pro	Glu	Leu	Asp	Gln	Thr	Ile	Glu	Trp	Phe	His
				165					170					175	
Pro	Asn	Asn	Lys	Arg	Asn	Gln	Leu	Trp	Leu	His	Leu	Asn	Thr	His	Thr
			180					185					190		
Asn	Val	Glu	His	Thr	Gly	Leu	Gly	Tyr	Ala	Leu	Gln	Asn	Ala	Ala	Thr
		195					200					205			
Ala	Gln	Asn	Tyr	Val	Val	Arg	Leu	Thr	Ile	Tyr	Val	Gln	Phe	Arg	Glu
	210					215					220				

Phe Ile Leu Lys Asp Pro Leu Asn Lys
225 230

<210> 169

<211> 206

<212> PRT

<213> Type A PWD circovirus

<400> 169

Met Ile Ser Ile Pro Pro Leu Ile Ser Thr Arg Leu Pro Val Gly Val
1 5 10 15

Pro Arg Leu Ser Lys Ile Thr Gly Pro Leu Ala Leu Pro Thr Thr Gly
20 25 30

Arg Ala His Tyr Asp Val Tyr Ser Cys Leu Pro Ile Thr Leu Leu His
35 40 45

Leu Pro Ala His Phe Gln Lys Phe Ser Gln Pro Ala Glu Ile Ser His
50 55 60

Ile Arg Tyr Arg Glu Leu Leu Gly Tyr Ser His Gln Arg Pro Arg Leu
65 70 75 80

Gln Lys Gly Thr His Ser Ser Arg Gln Val Ala Ala Leu Pro Leu Val
85 90 95

Pro Arg Ser Ser Thr Leu Asp Lys Tyr Val Ala Phe Phe Thr Ala Val
100 105 110

Phe Phe Ile Leu Leu Val Gly Ser Phe Arg Phe Leu Asp Val Ala Ala
115 120 125

Gly Thr Lys Ile Pro Leu His Leu Val Lys Ser Leu Leu Leu Ser Lys
130 135 140

Ile Arg Lys Pro Leu Glu Val Arg Ser Ser Thr Leu Phe Gln Thr Phe
145 150 155 160

Leu Ser Ala Asn Lys Ile Ile Lys Lys Gly Asp Trp Lys Leu Pro Tyr
165 170 175

Phe Val Phe Leu Leu Leu Gly Arg Ile Ile Lys Gly Glu His Pro Pro
180 185 190

Leu Met Gly Leu Arg Ala Ala Phe Leu Ala Trp His Phe His
195 200 205

<210> 170

<211> 206

<212> PRT

<213> Type A PWD circovirus

<400> 170

Met	Ile	Ser	Ile	Pro	Pro	Leu	Ile	Ser	Thr	Arg	Leu	Pro	Val	Gly	Val	
1				5					10					15		
Ala	Arg	Leu	Ser	Lys	Ile	Thr	Gly	Pro	Leu	Ala	Leu	Pro	Thr	Thr	Gly	
			20					25					30			
Arg	Ala	His	Tyr	Asp	Val	Tyr	Ser	Cys	Leu	Pro	Ile	Thr	Leu	Leu	His	
		35					40					45				
Leu	Pro	Ala	His	Phe	Gln	Lys	Phe	Ser	Gln	Pro	Ala	Glu	Ile	Ser	His	
	50					55					60					
Ile	Arg	Tyr	Arg	Glu	Leu	Leu	Gly	Tyr	Ser	His	Gln	Arg	Pro	Arg	Leu	
65					70					75					80	
Gln	Lys	Gly	Thr	His	Ser	Ser	Arg	Gln	Val	Ala	Ala	Leu	Pro	Leu	Val	
				85					90					95		
Pro	Arg	Ser	Ser	Thr	Leu	Asp	Lys	Tyr	Val	Ala	Phe	Phe	Thr	Ala	Val	
			100					105						110		
Phe	Phe	Ile	Leu	Leu	Val	Gly	Ser	Phe	Arg	Phe	Leu	Asp	Val	Ala	Ala	
		115					120					125				
Gly	Thr	Lys	Ile	Pro	Leu	His	Leu	Val	Lys	Ser	Leu	Leu	Leu	Ser	Lys	
	130					135					140					
Ile	Arg	Lys	Pro	Leu	Glu	Val	Ser	Ser	Ser	Thr	Leu	Phe	Gln	Thr	Phe	
145					150					155					160	
Leu	Ser	Ala	Asn	Lys	Ile	Ile	Lys	Lys	Gly	Asp	Trp	Lys	Leu	Pro	Tyr	
				165					170					175		
Phe	Val	Phe	Leu	Leu	Leu	Gly	Arg	Ile	Ile	Lys	Gly	Glu	His	Pro	Pro	
			180					185					190			
Leu	Met	Gly	Leu	Arg	Ala	Ala	Phe	Leu	Ala	Trp	His	Phe	His			
		195					200					205				